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EXPLORATIONS IN EASTERN PALESTINE, II

NELSON GLUECK

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Air-plane view of Mene'iyyeh.



## EXPLORATIONS IN EASTERN PALESTINE, II

NELSON GLUECK  
HEBREW UNION COLLEGE

The archaeological survey in Eastern Palestine conducted by a joint expedition of the American School of Oriental Research, Jerusalem, and the Transjordan Department of Antiquities, concerned itself during the spring and summer of 1933 chiefly with Moab.<sup>1</sup> It was continued during the spring and summer of 1934 by a joint expedition of the American School of Oriental Research, Baghdad, the Hebrew Union College, the American Council of Learned Societies, and the Transjordan Department of Antiquities. This time it was the territory of ancient Edom that was explored. Its boundaries were determined, and more than two hundred and fifty sites examined, whose dates were established particularly by means of the sherds found on them. For the early history of Edom no such inscription as that on the famous Moabite stone has thus far been discovered. The presence of Edomite Bedouin tribes on the northwest boundary of Egypt is mentioned in an Egyptian document from the time of Merneptah,<sup>2</sup> and Ramses III reports plundering the tents of the people of Se'ir.<sup>3</sup> Otherwise the Bible remains the chief source of information aside from the archaeological evidence of the country itself. The survey revealed that in each of the various periods of settlement in Edom<sup>4</sup> there were numerous fortresses, towns, and villages, joined together by important highways. Agriculture, industry, art, and trade were well developed. Edom and Moab were probably occupied simultaneously, their histories running parallel courses.

The joint expedition in Edom was under the direction of the writer, in his capacity of Annual Professor of the American School of Oriental Research, Baghdad, while on leave of absence from the Hebrew Union College. Mr. George Horsfield, Adviser to the Transjordan Department of Antiquities, continued his deep personal interest in the plans of the expedition and afforded it all possible assistance. He permitted his chief assistant, Mr. R. G. Head, to join the expedition for the period of its duration and assigned 'Alī Abū

<sup>1</sup> ANNUAL XIV, pp. 1-113.

<sup>2</sup> Breasted, *Ancient Records of Egypt*, III, p. 273; Buhl, *Geschichte der Edomiter*, pp. 52-3.

<sup>3</sup> Breasted, *Ancient Records of Egypt*, IV, p. 201; Albright, *Vocalization of the Egyptian Syllabic Orthography*, p. 38, no. 12.

<sup>4</sup> Albright, *Vocalization of the Egyptian Syllabic Orthography*, p. 34, no. 21.

Ghōsh, Antiquities guard, to act as guard to it. Mr. Head was an invaluable member of the expedition. He knows the Arabs of Transjordan as do few others and is possessed of fine archaeological ability. 'Alī Abū Ghōsh proved again to be a cheerful and capable assistant. Four separate trips were undertaken, lasting respectively from March 19 to April 20, May 2 to May 26, June 10 to June 22, and July 6 to July 12. During part or all of the first trip we had with us also Dr. Cyrus Gordon, Fellow of the American School of Oriental Research, Baghdad, Mr. Percy B. Upchurch, Two Brothers Fellow of the American School of Oriental Research, Jerusalem, Ḥasan Šāfi, who acted as guide and additional guard during the 'Arabah trip, Sheikh 'Audeh ibn Ahmed el-Aṣfar, Sālim ibn Mes'ad, 'Audeh ibn 'Id, and Ifrij ibn Šabbāḥ. The latter four belong to the Benī 'Aṭīyeh. They furnished and took care of the five riding and two pack camels used on the trip from Kerak to 'Aqabah. During the second and third trips we had with us only Mr. Head and 'Alī Abū Ghōsh. On the fourth trip we were accompanied by Mr. J. H. Iliffe, Keeper of Antiquities of the Palestine Museum, Dr. Gordon, Mr. Head, 'Alī Abū Ghōsh, and Ḥannah Tangō, guard of the Palestine Museum. To all of them we wish to express here our hearty thanks for their help and companionship. We are indebted also to Lt. Col. C. H. Cox, C. B., Chief British Resident in Transjordan, Col. F. G. Peake, C. B. E., Commander of the Arab Legion, Transjordan, and to Major C. S. Jarvis, Governor of Sinai, for the permission to work in Transjordan and Sinai, and particularly for the assistance and hospitality extended to us by their representatives. It was helpful to discuss our plans with Major A. S. Kirkbride, O. B. E., M. C., Assistant British Resident, 'Ammān. The plans and map were drawn by Mr. Head, and prepared for publication by Mr. Herman Shapiro, architect, Cincinnati, O. The sherds were drawn to scale by Mr. N. Reis of the Hebrew University, Jerusalem, and photographed by Mrs. Joshua Starr under the direction of Dr. William F. Stinespring, Acting Director of the American School of Oriental Research, Jerusalem. Dr. and Mrs. Stinespring spared no efforts in helping us collect the various supplies required and welcomed us with warmest hospitality whenever we returned to Jerusalem between trips. I should like also here to express my thanks to Dr. Stella Ben-Dor, who cleaned all the coins which were found and read those which were legible, and to Dr. Edward T. Newell, who checked over the identifications. Dr. Cyrus Gordon assisted with the general photography. Mr. G. S. Blake, geological Adviser of the Palestine Government, most kindly examined the mineral specimens which were collected. That we were able to accomplish practically all of the planned work of archaeological exploration and mapping in the

large area of Edom during the time at our disposal is due in large part to the financial and moral support provided by the authorities of the American School of Oriental Research, Baghdad, the American Council of Learned Societies, and the Hebrew Union College. To Dr. Julian Morgenstern, President of the Hebrew Union College, and to its Board of Governors, the writer is particularly indebted for the generous leave of absence of half a year, which followed so closely upon a previous year's leave of absence to serve the American School of Oriental Research, Jerusalem. It was a privilege to be able to consult Père H. Vincent and Professors Clarence S. Fisher and William F. Albright with regard to the pottery which was found.

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While most of the sites examined were in the territory of ancient Edom, a small area in Moab around Jebel Şiyâghah, ancient Mt. Nebo, was examined also, inasmuch as we had not had time to survey it during the preceding year, and a rapid survey of southern Palestine between Beersheba and 'Aqabah was undertaken, primarily to determine how far west the territory of ancient Edom extended. Some of the places examined had been previously visited and described, others had never been recorded. All of them had to be gone over carefully because of the necessity of studying the sherds which are to be found strewn over almost every ancient site. As has been pointed out repeatedly,<sup>4</sup> it is now possible from surface finds of pottery or of sherds alone to determine with a considerable degree of accuracy the age to which a particular site belongs, even when all other indications are missing. The value of Fritz Frank's important survey of the 'Arabah<sup>5</sup> is lessened by his failure to evaluate properly the pottery found on the sites he visited. As in Moab, so also in Edom, traces of three or four ancient settlements from different ages, to judge from pottery finds, could often be found in the same place. The Early Iron Age Edomite "king's highway,"<sup>6</sup> for instance, which had succeeded an earlier Bronze Age<sup>7</sup> one, was replaced subsequently along practically the same line by Nabataean and Roman roads connecting important settlements.

The first area examined in Edom was the 'Arabah, the great rift extending for approximately 185 kilometres between the Dead Sea and the Gulf of

<sup>4</sup> ANNUAL XIV, p. 3.

<sup>5</sup> *Aus der 'Arabah*, I, in ZDPV 57, 1934, hereafter to be designated as AA.

<sup>6</sup> Numbers 20, 17; Deut. 2, 28.

<sup>7</sup> For the table of archaeological periods in Palestine, to which those in Edom are related, see ANNUAL XIII, p. 98.

'Aqabah. It was examined in order to determine, if possible, the nature of the route of travel through it mentioned in the Priestly account of the Exodus in Numbers 33, 36 f. We were interested in finding out the relationship of the 'Arabah proper to the port city of Ezion-Geber and its successor, Elath, situated at the north end of the Gulf of 'Aqabah in the Early Iron Age. It was desired also to determine through archaeological evidence, if possible, the exact relationship of the 'Arabah to the rest of Edom on the one hand and to Judah on the other. Various places in the 'Arabah had been previously visited,<sup>8</sup> as we shall see. We were glad to learn subsequently that Frank had just finished an extensive examination of the 'Arabah before we commenced our own. The two surveys complement each other in many ways,<sup>9</sup> as will be pointed out in the following discussion. Each expedition found some sites not discovered by the other. A comparison of the conclusions arrived at for individual places and for the history of the settlements in the 'Arabah affords a welcome source of scientific control of the results obtained.

*March 19, 1934.* We arrived at Kerak on March 19, having driven from Jerusalem via 'Ammân. Obtaining camels in Kerak, we rode from there to the Dead Sea, and then through the entire 'Arabah to 'Aqabah. About an hour's walk to the southwest, below the Kerak hill, we came to 'Ain el-Frenjî,<sup>10</sup> where we stopped to fill our water-skins. On the way down we found fragments of Moabite pottery, similar to those we had found the year before at numerous Moabite sites, belonging to the period between approximately the thirteenth and eighth centuries B. C. Professor Albright first discovered this distinctive Moabite pottery at Kerak in 1924.<sup>11</sup> We also found a number of Nabataean, Roman, Byzantine, and mediaeval Arabic sherds on the hillsides below Kerak, giving us a fairly complete picture of the history of occupation of this important site, which is generally and correctly identified with Kir-hareseth, or Kir-heres, the capitol of Moab.<sup>12</sup>

Descending westward, we followed a broad, newly constructed dirt-road, which reached as far down as Tell edh-Dhrâ', situated on the edge of the Mezra'ah, with its irrigated plantations. We stopped at 'Ain er-Resis, on the right side of the road, at 5.00 p. m., having ridden three hours from

<sup>8</sup> For the history of the exploration of the 'Arabah see Alt's introduction to AA, pp. 191-2.

<sup>9</sup> Alt, *loc. cit.*, p. 194.

<sup>10</sup> Irby suggests that the name of the spring memorializes the occupation of the district by the Crusaders, PA I, p. 11.

<sup>11</sup> ANNUAL XIV, p. 3; *Bulletin* 14, pp. 10-11.

<sup>12</sup> II Kings 3, 25; Is. 16, 7. 11; Jer. 48, 31. 36; cf. also Is. 15, 1; M, p. 58.

'Ain el-Frenjī. Near the spring, on a small flat area below the road, is Kh. er-Resīs, commanding the descent to the Wādī el-Kerak below. There were the foundation stones of half a dozen small houses, made of rough limestone blocks. Traces of ancient terraces were visible. A small quantity of Nabataean sherds was found, including painted, rouletted and grooved pieces, belonging to fine, thin vessels. There were also several pieces of sigillata, one of them showing a leaf pattern<sup>13</sup> stamped on it. Some painted, mediaeval Arabic sherds were picked up.

*March 20.* About three kilometres farther on we came to a small ruin on the north side of the road called Rujm el-Habbāzāt. It is a small ruined watch-tower, five metres square, built on the summit of a spur overlooking the road, which makes a south bend at this point, and commanding the slopes and hills leading to the Lisān below. No sherds were found, and the crumbling limestone blocks of the foundation walls gave no indication of the date of the ruin. It probably does not go back beyond the mediaeval Arabic period, and may be later.

A number of other small watch-towers or police posts were passed then on the way down to Tell edh-Dhrā'. At none of them were sherds found. The ruins must be mediaeval Arabic or later, to judge from the nature of their construction. We passed thus, about a kilometre farther on, two small ruins called Qeṣeir el-Habbāzāt, and a short distance below them another watch-tower, called Rujm eṣ-Ṣerfān. These sites guarded the road leading from Kerak to the irrigated area, el-Mezra'ah, above the Lisān.

Tell edh-Dhrā', which from the distance looked like a typical artificial city-hill, proved to be a natural formation. Nearby is the important Early Bronze Age site of Bāb edh-Dhrā', discovered by Albright and Kyle in 1924. It is a large camp, with traces of many stone fireplaces and foundations of buildings left. To this place the people of the Cities of the Plain repaired during the festival seasons to escape the heat of the Dead Sea Valley and to perform the appropriate religious ceremonies. A fortress guarded the site.<sup>14</sup>

At 1.10 p. m. we were again in the saddle and headed south for Umm el-'Aqāreb, near the southeast corner of the Lisān. At 4.10 p. m. we came to Birket el-Hājj, which in the fairly recent past stored water for the pilgrims on their way to Mecca. Parts of the *birkeh* are now fallen in, but it could easily be made serviceable again. Its walls are made of rows of boulders, the larger ones at the bottom, with small stones between the various rows. The

<sup>13</sup> ANNUAL XIV, p. 38.

<sup>14</sup> Bulletin 14, pp. 6-7; ANNUAL VI, pp. 58-62; APB, pp. 135-7.



inside surface was carefully plastered several layers thick, and large sections still retain the original plaster covering. An earthwork was placed around the sides of the *birkeh* on top to help deflect the rain water into it. Opening into the southeast end of the *birkeh* is a ruined conduit. It led the water into the *birkeh* from a small *wādī* which commencing in the foothills to the east curves around the south and west sides of the *birkeh*. No sherds were found. We remained there for about half an hour and then rode on, arriving at Umm el-'Aqāreb (1 on the map, inset) at 5.30 p. m. It is situated a short distance above the Seil 'Esāl, in what was once the very wide bed of the *seil* near its outlet into the Dead Sea. A huge number of large and small boulders are strewn about, most of them having been washed down by the waters of the stream and by the strong seasonal rains from the sandstone hills, about a kilometre away to the east. Between the foothills and the boulder-strewn area, known as the Arḍ Umm el-'Aqāreb, were the remains of a completely destroyed *birkeh*, measuring approximately 34 metres square. Several ruined conduits led from it to small, cultivable areas between the masses of boulders. A small number of Nabataean, Byzantine and mediaeval Arabic sherds were found in these areas, but despite the most careful search, nothing earlier was discovered. While shifting boulders around in order to clear places for our blankets, care had to be exercised to avoid the scorpions concealed beneath them, from which the place derived its name. No archaeological evidence was discovered to indicate that Umm el-'Aqāreb had been occupied in the Early Iron Age.<sup>15</sup> That this place marks the ascent of the 'Aqrabbīm<sup>16</sup> is therefore problematic, although an absolute identification has been announced.<sup>17</sup>

*March 21.* About a kilometre and a half southeast of Umm el-'Aqāreb we came upon a large, completely ruined Byzantine structure, called Kh. 'Esāl. Fragments of Byzantine pottery and glass were found. A short distance removed from it, in the foothills to the east, is a small ruined structure called Qaşr 'Esāl. It is 16 metres square and like Kh. 'Esāl is made of cut sandstone blocks. The debris inside the *qaşr* had been cleared away and foundations laid for a new structure, probably a Turkish police-post, which was never completed. The original *qaşr* is probably also Byzantine in origin. No sherds were found. About three kilometres south of Qaşr 'Esāl, on the top of a high outspur overlooking the Dead Sea, is Kh. Merşid, which turned out to

<sup>15</sup> *Bulletin* 55, p. 4; M, p. 68.

<sup>16</sup> Numbers 34, 4; Joshua 15, 3; Judges 1, 36.

<sup>17</sup> PEFQS, July 1933, p. 143; Phythian-Adams, *The Call of Israel*, p. 194; cf. ZDMG 66, p. 307.

be the ruins of a modern Turkish police-post, with strands of barbed wire still surrounding it.

Descending, and following the track leading across the small plain between the Dead Sea and the foothills to the east, we crossed the Seil en-Numeirah, stopping about a kilometre south of it at Rujm en-Numeirah<sup>18</sup> (2). Oriented north and south, it measures 17 by 19 metres. Large quantities of Nabataean sherds were found on the *rujm* itself and on the surface of the ground about it. The *rujm* is about four metres high and conceals the ruins of a large building, which would probably prove to be comparatively intact if the debris covering it were removed. The area between the *rujm* and the Dead Sea shows traces of former cultivation. Rujm en-Numeirah was evidently an important way-station on the Nabataean track which led from 'Aqabah through the 'Arabah to Kerak. Several hundred metres east of Rujm en-Numeirah, on top of a high, flat-topped outspur, is a large rectangular area with some traces of what may have been originally an enclosing wall. A few indistinguishable sherds were found.

Leaving Rujm en-Numeirah, we pushed on to Ghôr eş-Şâfi, near the south-eastern end of the Dead Sea. The waters of the Seil el-Qurâhî, as the lower end of the Wādî el-Hesâ is called, irrigate an extensive area, part of which is in a swampy state. We camped for the night in the midst of a group of ruined buildings which are for the most part mediaeval Arabic in origin, and were probably used as sugar-mills (Fig. 1). Conduits on the top of stone walls built over arches brought water to the mills, which indeed are known as the Tawâhîn es-Sukkar<sup>19</sup> (3). The site is that of the Byzantine-Mediaeval-Arabic Zoar. Byzantine and mediaeval Arabic sherds were found. In the Middle Ages this region supported flourishing sugar and indigo plantations.<sup>20a</sup> The large green fields of eş-Şâfi were a welcome relief after the waste stretches traversed from the time that we left the plantations of el-Mezra'ah. The cultivable areas between the Ghôr el-Mezra'ah and the Ghôr el-Feifeh (south of the Ghôr eş-Şâfi) were once extensively utilized, however, and were marked with important settlements, particularly during the late Early Bronze Age and the Nabataean, Roman, Byzantine, and mediaeval Arabic periods. It is most probable, as Albright has pointed out in connection with Bâb edh-Dhrâ', that the steadily rising waters of the Dead Sea have covered

<sup>18</sup> M, pp. 68, 74 note 2; Is. 15, 6.

<sup>19</sup> PA I, p. 16; *Bulletin* 14, pp. 4-5. These ruins are also known as el-Qeryeh, and are connected with Qaşr eş-Tûbah, ME II: 2, pp. 210-11; *Bulletin* 14, p. 4; ANNUAL VI, p. 57; AA, pp. 205-6.

<sup>20a</sup> *Bulletin* 14, p. 4; ANNUAL VI, p. 56.

the cities of Sodom, Gomorrah, and Zoar, located respectively by the Seil en-Numeirah, the Seil 'Esâl, and the Seil el-Qurâhî.<sup>20</sup> Further proof for the location of the Biblical Zoar in the Ghôr eş-Şâfi has been furnished by Frank, who found graves there containing vessels and sherds, which, according to his photograph of some of them,<sup>21</sup> belong to the end of the Early Bronze Age and the beginning of the Middle Bronze Age. Frank reports another interest-

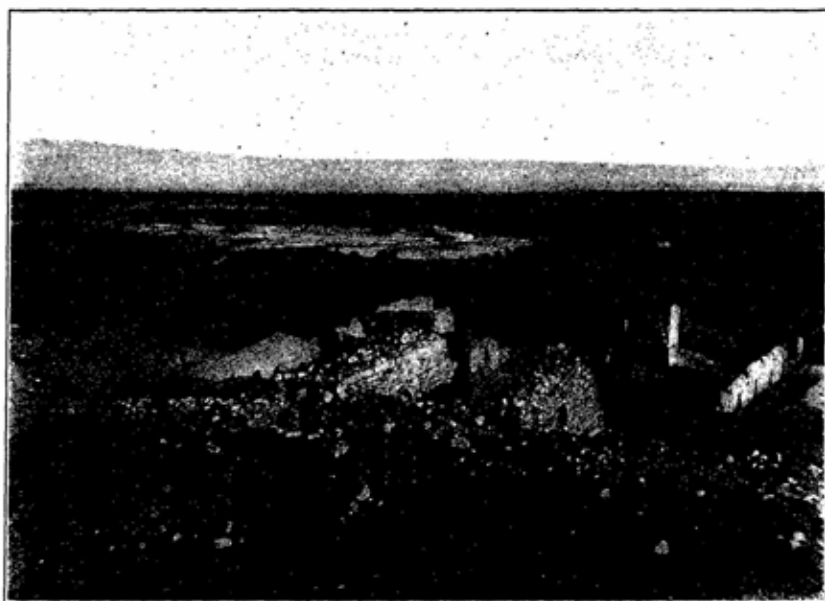


Fig. 1. Ṭawāḥīn es-Sukkar, in the Ghôr eş-Şâfi.

ing find in the Ghôr eş-Şâfi. About 150 metres west-northwest of Ṭawāḥīn es-Sukkar is a small isolated hill, on the south side of which is the tomb of Sheikh 'Isā,<sup>22</sup> and on the north side of which, according to Frank, are numerous pieces of slag, indicating the presence at one time of smelting furnaces. We are not informed as to what kind of slag he found.<sup>23</sup> To judge from the other copper mining and smelting sites in the 'Arabah, the likelihood is that

<sup>20</sup> ANNUAL VI, pp. 56-62; *Bulletin* 14, pp. 3-8; APB, pp. 133-7. Admah and Zeböyīm may also be covered by the waters of the Dead Sea, being submerged below the bay of el-Mezra'ah, ANNUAL VI, p. 58.

<sup>21</sup> AA, p. 204, and fig. 21 A.

<sup>22</sup> *Bulletin* 14, p. 4; ANNUAL VI, p. 57.

<sup>23</sup> AA, pp. 204-5, and pl. 8.

the slag found on the hill of Sheikh 'Isā<sup>24</sup> dates back to operations carried on in the Early Iron Age, with the possibility that, as at Feinân, as we shall see, it dates back to the early Bronze Age period assigned to the Cities of the Plain.

*March 22.* We left eṣ-Ṣāfi at 7.00 a. m., striking south through el-Ghôr, leaving the Dead Sea behind us, and arriving at the Seil el-Feifeh at 10.00 a. m. It is a small stream, which rises below eṭ-Tafileh, emptying finally



Fig. 2. Mill at Qaṣr el-Feifeh.

into the southern end of the Dead Sea after merging with the Seil Khaneizîr.<sup>25</sup> Much of the area of el-Ghôr, through which the Seil el-Feifeh and the Seil Khaneizîr flow, was occupied, particularly during the Middle Ages, with sugar and indigo plantations.<sup>26</sup> A few minutes ride south of the Seil el-Feifeh we came to a small ruined site known as Qaṣr el-Feifeh (4). There were several ruined mud-brick houses and walls centered around a large stone mill, which is still very well preserved. The lower stone, which was split, was held together with iron clamps (Fig. 2). There were also fragments of other

<sup>24</sup> Albright, who made soundings there, does not report the presence of slag; *Bulletin* 14, p. 4.

<sup>25</sup> ME II: 2, p. 210.

<sup>26</sup> *Bulletin* 14, p. 4; ANNUAL VI, p. 56.

mills on the site. Several hundred metres to the northeast are some ruins indicating the presence of a reservoir.<sup>27</sup> Traces of former extensive cultivation are visible. Qaṣr el-Feifeh, like Ṭawāhîn es-Sukkar in the Ghôr eṣ-Ṣâfî, was the center of a rich agricultural district during the Middle Ages. A few mediaeval Arabic sherds were found, but nothing earlier. The Ḥoweitât Bedouin make use of the desolate site as a grave yard.

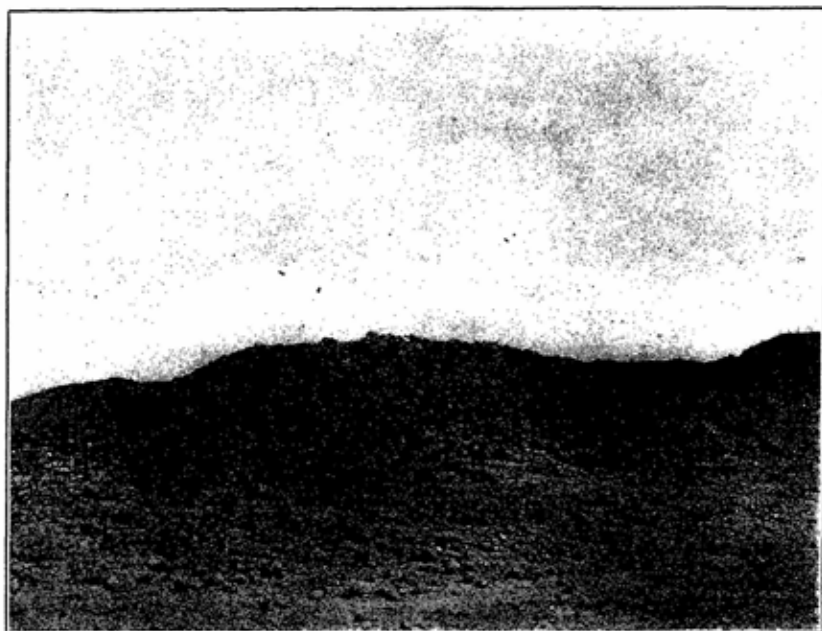


Fig. 3. Rujm Khaneizîr.

We left Qaṣr el-Feifeh at 10.15 a. m., stopping at 11.45 a. m. at the southeastern end of the Ghôr, by the Seil Khaneizîr. At the point where the Wādî Khaneizîr merges with the Ghôr, high up on a flat-topped outspur on the right bank of the *wādî*, are the ruins of Rujm Khaneizîr <sup>27a</sup> (5). It is a large, completely ruined watch-tower, made of boulders taken from the Seil Khaneizîr (Fig. 3). Strategically placed, it commands a view of the entire Ghôr to the north of it, of much of the northern end of the Wādî el-Jeib to the west of it, and of part of the Wādî Khaneizîr in back of it to the

<sup>27</sup> AA, p. 210; Alt, AA II, pp. 24. 32-3, 41, identifies el-Feifeh with Praesidium.

<sup>27a</sup> The tell el-chanzîre mentioned by Frank, AA, p. 212, and Pl. 28 B, does not seem to be the same site as Rujm Khaneizîr.

southeast. Unfortunately not a single sherd could be found either on the top or on the steep sides of the hill to help date the *rujm*, although a most careful search was made. The tower may belong to the mediaeval Arabic period, guarding the approaches from the south to the intensively cultivated

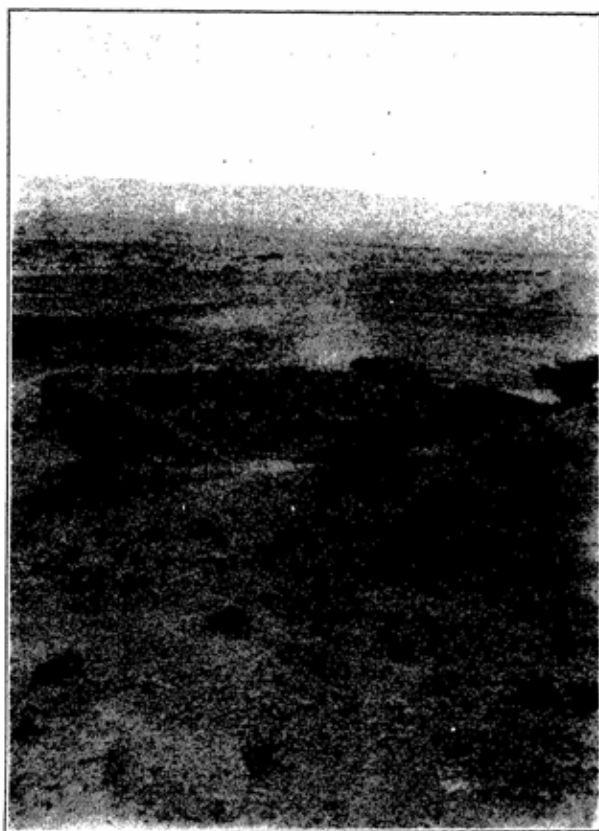


Fig. 4. Birket eṭ-Ṭelâḥ, with part of Kh. eṭ-Ṭelâḥ visible below it, looking northwest.

oases on the east and south sides of the Dead Sea. It may possibly have been a southern counterpart of *Rujm en-Numeirah* (2) and served also to guard the approaches to the important Nabataean sites at eṭ-Ṭelâḥ (6) and el-Ḥoṣḥ (7), situated to the south and southwest respectively, in the 'Arabah.

Leaving *Rujm Khaneizir* at 2.30 p. m., we climbed up to the elevated plain which faces the Ghôr and continued southward in the 'Arabah, arriving at

4.10 p. m. at eṭ-Ṭelāḥ (6). It had previously been visited and planned by Musil in September 1902,<sup>28</sup> and by Frank in November 1932.<sup>29</sup> As we neared eṭ-Ṭelāḥ, numerous camel tracks began to converge towards it, indicating the presence of water there. Two large ruins were visible at eṭ-Ṭelāḥ, one of a *birkeh* (Fig. 4) and the other of a *caravanserai*. The *birkeh*, which is oriented practically east by west, measures 34.2 by 33.6 metres. Its east wall is flush

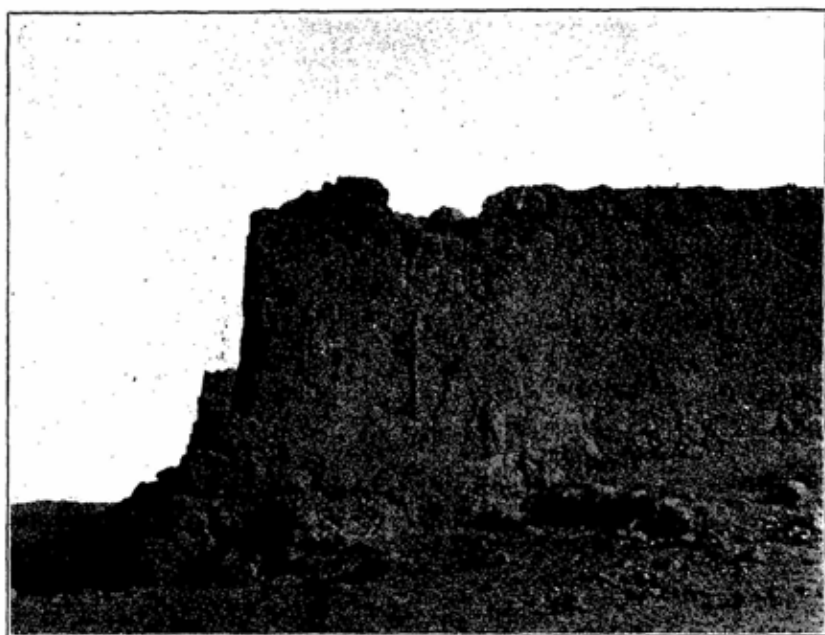


Fig. 5. Southwest corner of Birket eṭ-Ṭelāḥ.

with the bottom of the slope which rises behind it. The west wall, which is still twelve courses high, amounting to 4.5 metres, was strongly buttressed, with six graduated rows of large blocks of stone supporting the lower part of the wall (Fig. 5). The walls of the *birkeh*, which average 1.3 metres in thickness, are strongly built of roughly hewn limestone blocks set in rows, between which are rows of small stones. Both the inside and outside of the *birkeh* were carefully plastered. Inside the *birkeh* at the southeast corner are the remains of steps which led down into it. A channel, cut on the right side of the Wādī eṭ-Ṭelāḥ, which comes from the east, brought the water from

<sup>28</sup> ME II: 2, pp. 209-214.

<sup>29</sup> AA, pp. 213-15, and pl. 13.

'Ain eṭ-Ṭelāḥ in the *wādī* for a distance of almost a kilometre to the top of the east wall of the *birkeh*. The channel must have branched before reaching the top of the east wall, because there are two openings in the top of the east wall, one at the southeast corner and the other in the center, through which the water could enter the *birkeh*. A plastered channel runs the length of the top of the south wall. It branches to the right and left at the west end of the wall, permitting the water either to enter the *birkeh* at this point also or, by appropriate blocking off, to be emptied into a basin at the foot of the southwest side,<sup>30</sup> whence the water was led by another channel to the caravanserai and the fields below. There was probably also an opening in the center of the west wall of the *birkeh*, through which the water flowed into a channel leading directly to a spreading system of irrigation ditches in the rectangular fields. The fields are all enclosed with carefully built stone walls and when viewed from the top of the hill back of the *birkeh* to the east have the appearance of a huge checker board. They are bordered on the south-southwest side by the continuation of the Wādī eṭ-Ṭelāḥ and are pierced by the Wādī es-Sidreh.<sup>31</sup> There was also a large expanse of cultivated fields on the south side of the Wādī eṭ-Ṭelāḥ. About 50 metres below the *birkeh* to the west is a large caravanserai, measuring about 40 metres square, with four apparently square corner towers. The ruins were in such a state that it was impossible to determine where the entrance was. The walls were about two metres thick.

For almost a kilometre before arriving at eṭ-Ṭelāḥ it was possible to identify the site as Nabataean by the numerous sherds strewn over the surface of the ground. Eṭ-Ṭelāḥ was almost exclusively a Nabataean site, having apparently never been occupied before the Nabataean period. A subsequent Roman occupation left practically no impression upon the place so far as the pottery is concerned, because it is completely Nabataean. All kinds of Nabataean sherds in large quantities were found.<sup>32</sup> After Trajan conquered the Nabataeans, a Roman garrison was placed at eṭ-Ṭelāḥ (Toloana),<sup>33</sup> whose inhabitants, however, continued to make use of Nabataean pottery. In this place, as in other sites in the 'Arabah which were occupied by Roman garrisons after the collapse of the Nabataean kingdom, Nabataean potters continued to furnish all or much of whatever pottery was necessary. The Nabataeans did not disappear from off the face of the earth after being subjected by the Romans. At eṣ-Ṣāfī

<sup>30</sup> Frank thinks it represents the remains of a mill; AA, p. 214.

<sup>31</sup> For situation plans of eṭ-Ṭelāḥ see ME II: 2, p. 214, fig. 148; AA, pl. 13.

<sup>32</sup> *Bulletin* 55, pp. 5-6.

<sup>33</sup> Cf. Alt, "Vom Südostrand des römischen Reiches," in *Forschungen und Fortschritte*, July 1934, p. 244; ME II: 2, p. 247, note 23; AA II, pp. 24. 31. 49.



(Zoora), Feinân (Phaino), and Aila there were situated the largest Roman settlements in the 'Arabah. At Feinân and Aila, large quantities of Roman pottery were found.<sup>34</sup>

The Nabataean sherds found at eṭ-Ṭelâḥ and numerous other sites in Edom are similar to those found during the preceding year at many Nabataean sites, situated for the most part in the territory of ancient Moab.<sup>35</sup> The sherds included the fine fragile types of plain, painted, and rouletted Nabataean ware, which have been found at every Nabataean site thus far examined. In addition to sherds with finely levigated clay, which range in the color of their texture from reddish-brown to red, there were other sherds, equally well levigated and of the same delicate workmanship, which had been baked differently, leaving a fine black or dark gray core sandwiched between inside and outside layers ranging in color from reddish brown to red. This was characteristic also of coarser types of pottery. It is now clear from the sherds found at eṭ-Ṭelâḥ and numerous other Nabataean sites that painted decorations are not limited to the fine, fragile ware which was first recognized as being Nabataean but occur also on various types of coarse Nabataean ware. The painted decorations are delicate or crude according to the nature of the pottery itself. Stylized floral and leaf patterns in connection with clusters of circles and dots, parallel or criss-cross lines which may represent the veining of leaves, rope and chain patterns, all of them in solid, reddish brown paint, are the most frequently employed.<sup>36</sup> They are illustrated on Pl. 31A: 1-23; 31B: 24-27. 29-36. The following patterns on Pl. 31A were new to us: nos. 13. 19-22. They are from shallow bowls and plates with ring bases, decorated on the inside, wet-smoothed, buff surfaces with wavy or straight lines of reddish brown paint radiating from the center. Sometimes a horizontal band of reddish brown paint is drawn across the upper edge of the inner surface, with either wavy lines or blobs of paint extending from it as on nos. 5. 11. 12; cf. Pl. 32A: 17. 18 from Kh. Umm Râs, and no. 19 from Kh. edh-Dherîḥ. The sherds on Pl. 31A are from Kh. el-Moreighah (43). The sherds on Pl. 31B are from the following sites: nos. 24. 30. 31. 35. 36 from eṣ-Ṣabrah; nos. 25-27. 29. 32-34. 37. 41 from Bîr Madhkûr; nos. 38-40 from Kh. el-Moreighah; no. 28 does not belong in the picture. Nos. 37-40 are from plain cups or bowls with flat or rounded bottoms. No. 41 is the base of a glass vase from Bîr Madhkûr, where almost all of the pottery is Nabataean. Not enough glass has been found to determine whether or not the Nabataeans made glass, but in view of their general skill in ceramics there is little doubt

<sup>34</sup> Cf. Alt, *Forschungen und Fortschritte*, pp. 224-5; AA II, pp. 24. 26. 32. 45. 49. 54.

<sup>35</sup> ANNUAL XIV, pp. 74-6.

<sup>36</sup> ANNUAL XIV, p. 74, pl. 25.

in my mind that they were versed in the art. At several other sites, where otherwise only Nabataean pottery was found, some fine glass fragments were picked up with shapes and rims corresponding to those of Nabataean pottery. Mrs. George Horsfield is also of the opinion that the Nabataeans manufactured glass. One type of Nabataean ware, now definitely recognizable as such, is decorated with horizontal, irregularly spaced bands and lines of dark brown paint, placed either on the inside or outside surface and sometimes on both surfaces. We had previously found specimens of it in Moab and Edom during the preceding year, and Iliffe had found pieces of it in southern Palestine.<sup>27</sup> Examples of this ware, which usually has a dark gray core between reddish brown inner and outer surfaces, are shown on Pl. 32B: 22-26, 31 from Aila, and no. 27 from Kh. el-Qrein. A related type of Nabataean ware, Pl. 32B: 30, is decorated with bands of highly polished dark brown or reddish brown slip, bordered by lines of black paint, alternating with bands revealing the mat surface of the vessel; thus Pl. 32B: 28, 29 from Aila, which also have irregularly spaced bands of dark brown paint on the inside surface. Pl. 32B: 36, 37 from Kh. el-Moreighah show bands of reddish brown, polished slip alternating with bands of white wash; no. 37 has also a floral design on the inside surface. Other sherds show alternate bands of red paint over a wet-smoothed or polished outside surface, as Pl. 32B: 32, 33, 35, 36 from Kh. el-Moreighah, or bands of red paint on the inside surface, as Pl. 32B: 34 from Kh. el-Freifreh. Another type of Nabataean ware is covered with a grayish white wash over the outside surface and rim, put on before firing. To this general type belongs Pl. 32B: 40 from Kh. edh-Dherih. Over the white wash on the outside surface there is also visible part of a painted decoration, with a band of reddish brown paint over part of the rim and extending over the inside surface of the rim.

Numerous rouletted sherds were found at et-Telâh and other Nabataean sites. Rouletting is not limited to fine, fragile vessels but is found also in coarser variations on larger and cruder types of pottery. Pl. 32A shows various types of rouletted sherds from Bîr Madhkûr. Some of the vessels have rouletting above and below the ring bases, some of the bases being elaborately grooved. Occasionally a sherd is found with ornamental grooving on the outside surface. Numerous fragments of plain and rouletted sigillata ware were found. The rouletting on the sigillata ware is exactly the same as the rouletting on the other types of Nabataean ware.<sup>28</sup> Two pieces of rouletted sigillata ware are shown on Pl. 30B: 6, 7 from Kh. el-Moreighah, the larger

<sup>27</sup> ANNUAL XIV, p. 74; QDAP III, p. 134.

<sup>28</sup> ANNUAL XIV, p. 75, pl. 28.

piece, no. 7, with creamy core, being probably imported.<sup>39</sup> Two types of sigillata ware were frequently found, the one with reddish core being probably Nabataean in origin, the other with creamy core being related to the sigillata from Asia Minor. It is possible, however, that some of this type of sigillata was also manufactured locally by the highly skilled Nabataean potters. We have assigned the same date to the sigillata and non-sigillata ware found on Nabataean sites, that is, the period between the second century B. C. and the first century A. D.<sup>40</sup> Two of the fine, painted Nabataean sherds from Kh. el-Moreighah, Pl. 31A: 10.17 are, respectively, rouletted and grooved on the outside surfaces, forming an unusual combination of decorations, so far as our experience with Nabataean pottery goes.

In addition to the Nabataean pottery and fragments of glass found at et-Telâh, half a dozen coins were also found there. Only one remained legible to some extent, after being most carefully cleaned by Dr. Stella Ben-Dor. It was a Nabataean coin. On the obverse side were the busts of a king and on his right a queen, jugate, the queen being draped, both wearing ornaments on their heads. On the reverse are two crossed cornucopiae, between and below which are letters of a worn Nabataean inscription, apparently the name Shaqilath. This may mean the wife of either Aretas IV, 9 B. C.-40 A. D., or Malichus II, 40-71 A. D. The size of the coin suggests the time of Malichus II.<sup>41</sup>

Et-Telâh is today on the cross-roads of caravan traffic.<sup>42</sup> In the Nabataean period it was a main halting place for the Nabataean caravans which traversed the 'Arabah going north and south or crossed it going east and west. From Rujm en-Numeirah (2) it is a day's camel ride south to et-Telâh on the track leading down to Aila, which was originally a Nabataean site. The east-west track leads from et-Tafileh to et-Telâh, then to el-Hoşb (7), Qurnub (241), and across the Negeb to Beersheba and Gaza. Et-Telâh is an excellent example of what occurred in the ancient Near East, whenever political or economic factors—in a word, human factors—caused a place, a district, or a country to be abandoned. Our investigations have shown conclusively for Moab and Edom that the present abandonment of large areas in these countries is due for the most part, popular theories of precipitation cycles to the contrary notwithstanding, to changes in the political fortunes of the inhabitants.<sup>43</sup> The 'Arabah as a whole was, certainly in historical times,

<sup>39</sup> *Ib.*, p. 76.

<sup>40</sup> *Loc. cit.*

<sup>41</sup> Hill, *Catalogue of the Greek Coins of Arabia, Mesopotamia, and Persia*, p. 11, pl. II: 16.

<sup>42</sup> *AA*, p. 214.

<sup>43</sup> *ANNUAL XIV*, p. 39; Montgomery, *Arabia and the Bible*, pp. 90-106.

always a generally uninhabitable stretch of land, except for such places as eṭ-Ṭelāḥ, where water was available, or such places as Kh. Naḥās, where, as we shall see, mineral deposits attracted settlements in spite of inhospitable living conditions. The area of eṭ-Ṭelāḥ, however, could be made just as liveable today as it was in the Nabataean period were it to be settled with inhabitants of equal energy and intelligence, protected by a strong government.

*March 23.* We left eṭ-Ṭelāḥ at 8.00 a. m., going due west. The area traversed at first was a waste land of grayish earth and sand, covered with stones and boulders. At 9.00 a. m. we entered a golden, sandy area, tinged green with a very sparse growth of grass and shrubs and small flowers with white blossoms. There were several herds of camels and goats grazing in this area, watched over by Howeitat shepherds. Small *wādīs* intersected this area occasionally, but were easily negotiated. A cool breeze blew during the early part of the morning, and the ride was the most pleasant experienced during the entire expedition. The camels would nibble at the shrubs and tear off the more tender parts of the bushes while passing them. Occasionally they were fed with some especially succulent, long grasses, which the camelmen found growing along the way. At 9.45 a. m. the golden, sandy area ceased, and we again entered an area of grayish white, hard baked earth, covered with pebbles and boulders. At 10.00 a. m. we came to a small *rujm* (6a), guarding the descent into the broad Wādī el-Jeib. We could not ascertain its name nor find any sherds whatsoever to date it. It may well have been a small Nabataean watch-tower, which served as a midway post between eṭ-Ṭelāḥ and el-Ḥoṣb, which proved also to be an important Nabataean site. We descended then into the Wādī el-Jeib, stopping at 10.30 a. m. in a shady fissure on its western side. Starting again at 1.00 p. m., we went south-southwest up the Wādī Umm el-'Eidān for almost two hours, then turned west again, and reached el-Ḥoṣb (7) at 3.15 p. m. We were guided towards it by the huge, old *Sidr* tree, which serves as a landmark for el-Ḥoṣb from afar off.<sup>44</sup>

There are traces of a large, ruined caravanserai at el-Ḥoṣb (Eiseiba), built originally by the Nabataeans, occupied subsequently by the Romans,<sup>45</sup> and then completely wrecked in modern times by some army camel-corps or other, which could find no other place in the entire vicinity to build its camp. According to Musil,<sup>46</sup> the caravanserai was about 120 paces square, with

<sup>44</sup> ME II: 2, p. 206, fig. 144, n. 22.

<sup>45</sup> ME II: 2, pp. 207-8. 247; Alt, in *Forschungen und Fortschritte*, p. 245; AA II pp. 11. 24. 26. 31. 59.

<sup>46</sup> ME II: 2, p. 207.

square corner towers. At present nothing can be seen except some traces of its walls which have been torn down for the most part and built over to form the now abandoned military camp. The entrance was probably in the middle of the south side.<sup>47</sup> The Nabataean caravanserai was originally built



Fig. 6. 'Ain el-Hoşb.

of well cut limestone blocks, which were reused to build the walls around the modern camp. The foundation walls of various small buildings are visible around the caravanserai. Immediately east of it is 'Ain el-Hoşb (Fig. 6), which has evidently been widened and deepened in modern times. It can be seen bubbling up through the sand and runs out through a ditch into several

<sup>47</sup> For a plan of el-Hoşb see ME II: 2, p. 208, fig. 145.

channels to irrigate some sadly neglected fields. Originally the spring was enclosed in a walled basin, some of the stones of which are still visible. At the southeast corner of the site are the ruins of a well built, vaulted building, which may originally have served as a bath-house<sup>48</sup> (Fig. 7). The water was probably conducted to it from the spring through a special conduit, which has now disappeared. No sherds were found by this building, which may be

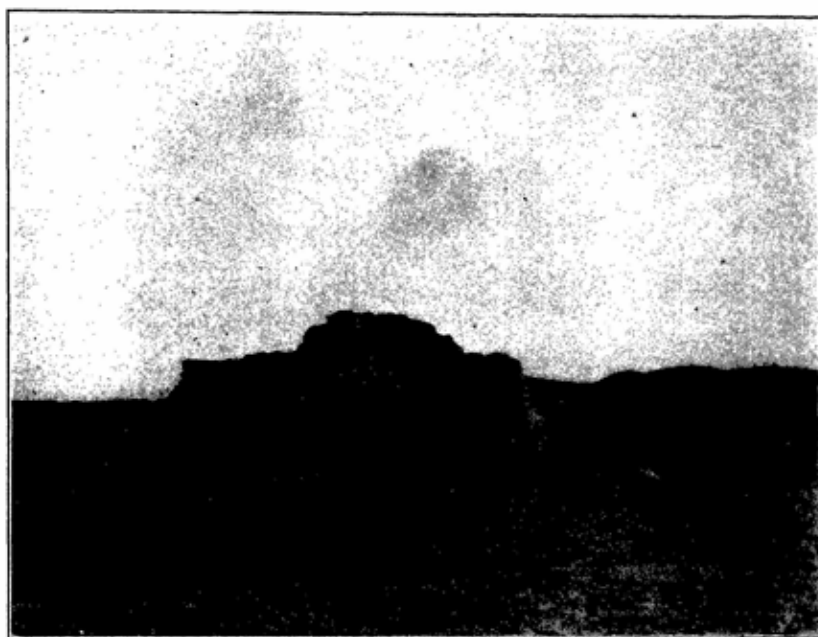


Fig. 7. Ruins of a Roman vaulted building at el-Ḥoṣḥ.

Roman in origin. Numerous Nabataean sherds of all types, however, were found among the debris of the caravanserai.<sup>49</sup> Several coins were found on the surface in the vicinity of the caravanserai, but despite the most careful cleaning nothing could be made of them.

El-Ḥoṣḥ was an important station on the Nabataean trade-route which led across the 'Arabah. Here the caravans rested, coming from eṭ-Ṭelāḥ, before continuing the journey westward to Qurnub, Beersheba, and Gaza,

<sup>48</sup> ME II: 2, p. 208; AA, p. 254.

<sup>49</sup> Frank is mistaken when he asserts (AA, p. 254) that the pottery at el-Ḥoṣḥ is Roman. It is almost completely Nabataean.

the western end of the great Nabataean trade-route. We found large quantities of Nabataean sherds at Qurnub, where they had also been previously reported. Nabataean sherds have been found at Tell es-Seba', the site of ancient Beersheba, and at Tell el-'Ajûl and Tell el-Fâr'ah near Gaza.<sup>50</sup> El-Ḥoşb is most strategically situated, guarding the approach to the 'Arabah from the Wādî Marrah and Fiqreh and controlling the tracks which led then from el-Ḥoşb to eṭ-Ṭelâḥ, Bîr Madhkûr, and Petra, and thus to Moab and Edom and Arabia.<sup>51</sup> Other tracks from Palestine led down the Neqb Merzebah and through the Wādî Merzebah to the 'Arabah, or through the Wādî eṣ-Şîq to Moyet el-'Awad in the 'Arabah, and then across the 'Arabah to Bîr Madhkûr.<sup>52</sup> It is interesting to note that tracks for armored cars have been planned leading from Beersheba to el-Ḥoşb, emphasizing thus the strategic importance of the place. The heyday of el-Ḥoşb seems to have been during the Nabataean period. Although we searched carefully, no sherds earlier than the Nabataean could be found there, and practically none later. A subsequent examination of the territory between Qurnub and el-Ḥoşb and between Aslûj and el-Ḥoşb likewise revealed nothing earlier than Nabataean occupation. The Roman occupation of el-Ḥoşb left no impress upon the place so far as the pottery is concerned.

*March 24.* Leaving el-Ḥoşb at 7.45 a. m., we retraced our steps till we had recrossed the Wādî el-Jeib, and then, bearing south-southeast, ascended the Wādî Ifdân, arriving at Ruĵm Ḥamr Ifdân (8) at 12.00 p. m. This is a small ruined watch-tower, measuring 6.20 metres square, and is oriented north and south. It is situated on the south bank of the Wādî Ifdân, at the point where the *wādî* emerges from the long chain of hills of the Jebel Ḥamr Ifdân, among which we were to find a number of important ancient sites. No sherds, except a few indistinguishable ones, were found to help date the *ruĵm*, which was made of dressed limestone blocks. It may have been a Nabataean watch-tower on the way between Bîr Madhkûr and el-Ḥoşb, or between Bîr Madhkûr and eṭ-Ṭelâḥ. Continuing east-northeast for about an hour, we came to 'Ain Ḥamr Ifdân. A short distance before arriving at the spring we noticed a small, flat-topped, isolated hill rising almost in the middle of the shallow *wādî* bed. Closer examination revealed that on it were the remains of an Early Iron Age acropolis, known as Kh. Ḥamr Ifdân (9), commanding the access to the spring and guarding the approaches to a number of

<sup>50</sup> QDAP III: 3, p. 133; ANNUAL XIV, p. 74.

<sup>51</sup> ME II: 2, p. 208; cf. below n. 105c.

<sup>52</sup> See below, p. 36.

Early Iron Age copper mining and smelting sites east and south of it (Fig. 8). Little is left of the acropolis except some sections of the outer wall on the west and north sides and some sections of revetment on the north side (see plan of Kh. Ḥamr Ifdân, Pl. 1). On the top of the west side of the acropolis are the traces of a tower, with some traces of room foundations near the middle of the formerly enclosed area. At the very foot of the acropolis hill are the remains of a long retaining (?) wall, while on the hillside immediately east

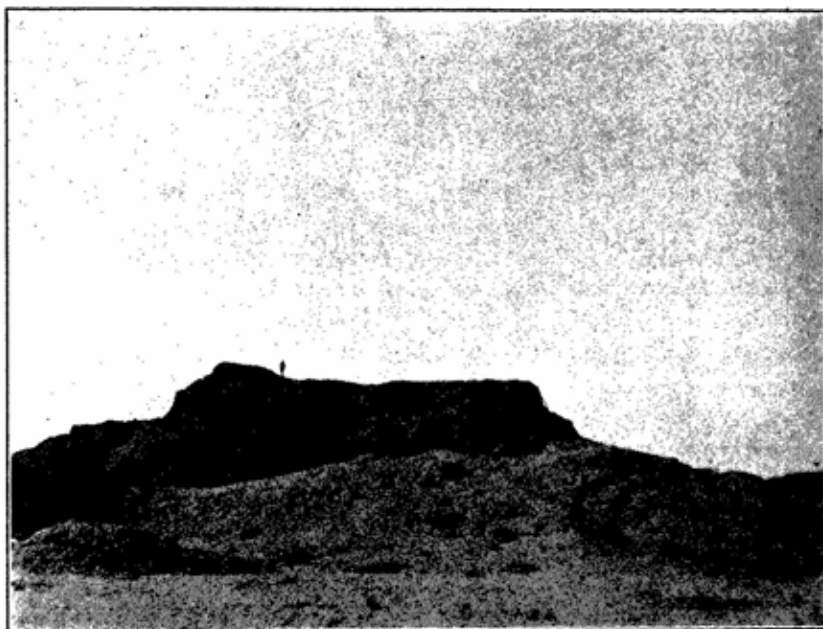


Fig. 8. Kh. Ḥamr Ifdân, looking west.

of it are the remains of a walled enclosure. The acropolis rises precipitously about thirty metres above the *wādī*. To judge from its size and strategic position and from the fine types of Early Iron Age pottery found on it. Kh. Ḥamr Ifdân was the seat of an important garrison. Several hundred sherds were gathered from the top and sides of the acropolis hill, all of which belong to the Early Iron Age. No slag was found, so evidently Kh. Ḥamr Ifdân cannot be identified with one of the sites found in its vicinity by Frank, on which slag heaps were discovered. On the sites which he terms *maḥam ma ifdân* and *rudschm ifdân*<sup>52</sup> he reports finding slag heaps and

<sup>52</sup> AA, pp. 218-9, and pl. 17. 18.



Roman pottery, indicating, furthermore, that the pottery on the latter site was particularly fine. In view of the EI I-II pottery found at Kh. en-Nahâs and other nearby mining and smelting sites, and in view of the fine EI I-II pottery found at Kh. Ḥamr Ifdân, I do not believe for a moment that the pottery seen by Frank was Roman but am convinced that it was Edomite and belonged to the Early Iron Age. In addition to typical rims with pinched button handles, cooking pot rims and bases, and loop handles, there were numerous fine painted sherds at Kh. Ḥamr Ifdân, which belong, as we shall show below in a general discussion of Edomite pottery, to the period extending chiefly from the thirteenth to the eighth century B. C. It is, I believe, these fine, skillfully decorated Early Iron Age Edomite sherds, closely related to analogous Moabite sherds,<sup>52</sup> which Frank has confused with Roman ware.

The small *wādī* immediately to the northeast of Kh. Ḥamr Ifdân comes to a dead end about a kilometre away. Leaving at 4.15 p. m., we ascended this *wādī* to the high, more or less level ground above it, following for a while a well beaten camel track which leads northward to 'Ain Suleimân; then, turning eastward, we descended a rugged, steep slope to the Wādī el-Gheweibeh, which we followed till at 5.30 p. m. we came to Kh. en-Nahâs (10).

*March 25.* Reserving Kh. en-Nahâs for later examination, having gone over it cursorily the evening before, we left at 7.30 a. m. on foot to search for several other sites, about which some Howeitat Bedouin, whom we had met the previous afternoon, had told us. We followed the course of the Wādī el-Gheweibeh going east-northeast, till at 8.30 a. m. we came to 'Ain el-Gheweibeh near the head of the *wādī*. The waters of the spring flow but a comparatively short distance before disappearing into the sandy bed of the *wādī*. A short distance above the spring, on the high ground on either side of the *wādī*, which had narrowed considerably at this point, lie the ruins of Kh. el-Gheweibeh (11). The fairly flat areas on either side of the head of the *wādī* were dotted with ruins of houses and small furnaces and were black with pieces and heaps of slag (see plan of Kh. el-Gheweibeh, Pl. 2). In the center of the northern half of the mining camp are the ruins of the foundation walls of a building ten metres square, perhaps the commanding officer's residence or the main watch-tower on the site, which seemed to be otherwise unfortified. On the surface of the site we found numerous sherds of a rather coarse type belonging to EI I and to the first part of EI II. A few Nabataean sherds were also found. The considerable quantities of copper

<sup>52</sup> ANNUAL XIV, pp. 15-22.

slag testify to intensive mining and smelting activities during the Early Iron Age. We did not actually find the copper-bearing rock by Kh. el-Ghewibeh, but we did find large quantities of such rock a few kilometres away between Kh. el-Ghewibeh and Kh. el-Jāriyeh. The crude methods of smelting then in vogue resulted in a considerable proportion of the copper still being left in the slag. Kh. el-Ghewibeh has not previously been recorded, so far as I can establish. Musil reports having ridden up the Wādī el-Ghewibeh, but evidently failed to get as far as 'Ain el-Ghewibeh or Kh. el-Ghewibeh.<sup>54</sup>

Leaving at 9.45 a. m. we headed west-northwest across the intervening hills for the Wādī el-Jāriyeh, the edge of which we reached at 10.30 a. m. Exposed to view as a result of a spring wash-out was a great mass of highly cupriferous sandstone. Descending the Wādī el-Jāriyeh, we found another copper mining and smelting center, called Kh. el-Jāriyeh (12), which also does not seem to have been recorded thus far. We arrived there at 12.15 p. m. Like Kh. el-Ghewibeh, Kh. el-Jāriyeh lies sprawled over two high, flat areas separated from one another by an intervening *wādī* (see plan of Kh. el-Jāriyeh, Pl. 3) and almost completely encircled by hills. Musil visited the Jebel el-Jāriyeh but did not get to Kh. el-Jāriyeh.<sup>55</sup> and small wonder, because unless one were looking for such a site it could easily be missed, hidden as it is in a pocket between the hills. The two halves of the site were covered with ruins of houses and smelting furnaces and were black with pieces and heaps of copper slag (Fig. 9). The two main sections of the site seem originally to have been enclosed with strong walls. The western half is divided into two parts by a tiny *wādī* running west-east through the center of the area into the Wādī el-Jāriyeh. Two small furnaces were found still fairly intact, a circular one, A, at the south end of the east side, and a square one, B (Fig. 10), at the north end of the west side, with foundations of other furnaces visible, such as C, near the center of the west side, and another circular furnace near it (see Pl. 3). Furnace A is in the form of an irregular circle and measures 2.9 by 2.6 metres; furnace B is 2.7 metres square, both being inaccurately represented on the sketch plan, Pl. 3. They are now only one story high. The roof of each was formed by placing several long, thin, rectangular stone slabs over the side walls, which are less than a metre in height and are built of three courses of rudely cut blocks of stone. Furnace C is about 5.2 metres square, and like furnace B is built on a comparatively circular foundation.<sup>56</sup> Some of the smelting furnaces were two stories high,

<sup>54</sup> ME II: 2, p. 213.

<sup>55</sup> ME II: 2, p. 213.

<sup>56</sup> Flinders Petrie, *Researches in Sinai*, pp. 242-3, fig. 172.



Fig. 9. Kh. el-Jāriyeh, looking northeast.

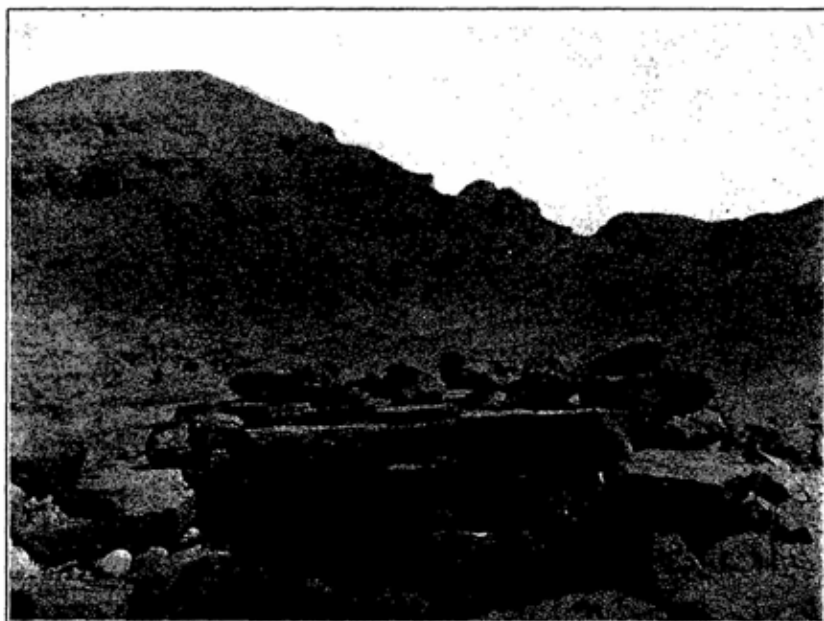


Fig. 10. Smelting furnace B, at Kh. el-Jāriyeh.

one compartment above the other (v. i., p. 27). Just how the ore was smelted is unknown to us. It seems likely that a bellows of some sort or other was made use of.<sup>57</sup> The question of the fuel supply will be discussed below. Some of the larger buildings at Kh. el-Jāriyeh and other mining centers we visited are probably smelting plants, in which several furnaces are located. We found such a smelting plant at Kh. Nqeib Aseimer, as we shall see.<sup>57a</sup> In Sinai at similar copper mining and smelting sites, marked also by slag heaps, furnaces of various types have been found.<sup>58</sup> Although we did not discover the source of the ore smelted at Kh. Jāriyeh, it must be in the immediate vicinity. On the surface of the site were numerous specimens of good ore consisting of mixed cuprite and malachite, and also pieces of cupriferous sandstone. Numerous Edomite sherds were picked up all over Kh. el-Jāriyeh, belonging to EI I and to the first half of EI II. In addition, a few Nabataean sherds were found. With the exception of Feinān, at none of the copper mining and smelting sites visited were any sherds found earlier than those of the Early Iron Age. The next period of sedentary occupation was indicated by Nabataean sherds.

Several questions remained open after we had completed our examination of Kh. el-Jāriyeh, one of them being the source of the water supply upon which the community resident there was dependent. At the present time there is no spring in the immediate vicinity. It is possible that a spring situated near the site may have dried up. The presence of bushes and shrubs of various kinds along the edges of the *wādī* bed leads one to think that there must be water underground. It seems probable, on the whole, that all these copper mining and smelting sites in the 'Arabah, with the exception of Feinān, were worked only during the winter and early spring, that is, during the main rainy seasons. It is also possible that, as in Sinai, food and water and even fuel supplies were transported regularly to these mining camps from various centers where they were available.<sup>59</sup> The question of the fuel supply to keep the smelting furnaces going presents difficulties. It does not seem likely that there were any more fuel supplies available in the vicinity of these mining and smelting camps of the 'Arabah in the Early Iron Age than there are today. Undoubtedly large quantities of dried shrubs and bushes were gathered to fire these furnaces, just as today in Palestine and Transjordan many crude lime-kilns are fired by laboriously gathered

<sup>57</sup> Cf. Jer. 6, 29 for reference to bellows. There are numerous references to smelting furnaces, Deut. 4, 20; Jer. 11, 4; I Kings 8, 51.

<sup>57a</sup> See below, p. 30 f.

<sup>58</sup> Flinders Petrie, *op. cit.*, pp. 18. 19. 27. 38, fig. 42, 51. 52. 242-3, fig. 172.

<sup>59</sup> Flinders Petrie, *op. cit.*, pp. 118-121.

bundles of such materials.<sup>60</sup> Large parties foraging over wide areas could assemble considerable quantities of such fuel even in the 'Arabah. However, this would hardly have sufficed to have kept the furnaces going long enough to produce the tremendous amount of copper which was smelted. That the smelting operations were conducted on a large scale may be judged from the numerous large slag heaps which mark all the mining sites in the 'Arabah. Most of the fuel, we believe, was imported in the form of charcoal, burned

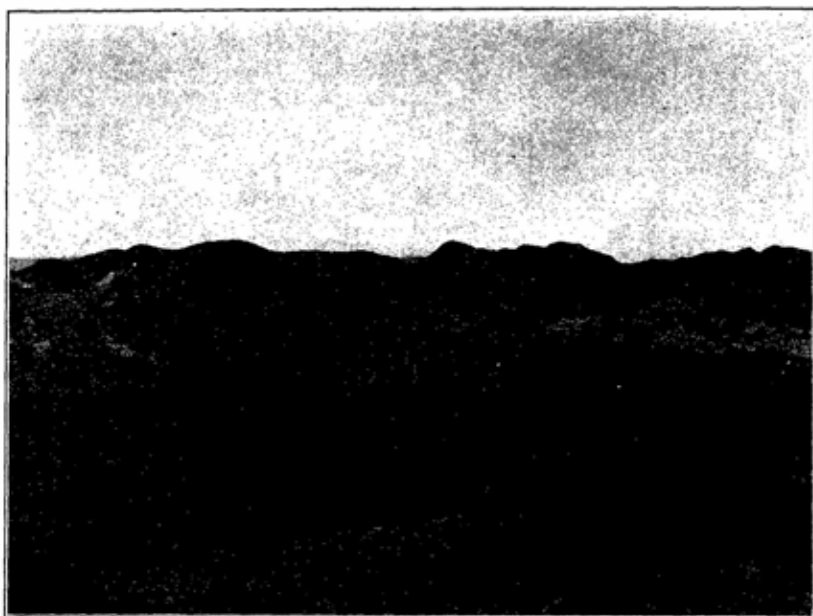


Fig. 11. Kh. en-Nahâs, looking northwest.

on the heavily wooded slopes of the hills of Edom,<sup>60a</sup> and then transported by camel and donkey to the settlements in the 'Arabah.

We left Kh. el-Jâriyeh at 1.30 p. m. and, following the course of the Wâdī el-Jâriyeh till it turned into the Wâdī el-Gheweibeh, returned to the very large mining and smelting site, Kh. en-Nahâs (10) at 2.10 p. m. It is about six kilometres in a straight line east-southeast of Kh. Ḥamr Ifdân. Bounded on the north by the Wâdī el-Gheweibeh, Kh. en-Nahâs is situated

<sup>60</sup> Flinders Petrie, *op. cit.*, p. 19.

<sup>60a</sup> Albright, *Vocalization of the Egyptian Syllabic Orthography*, p. 38, no. 12, has shown that the name Se'ir means "woods." It was only Edom proper, as he points out in JPOS XV, 1935, p. 188, which was ever wooded in historical times.

in an oblong cul-de-sac, pointed north-south. A semi-circular sweep of high sandstone hills encloses the site. On the east side is a small *wādī*, which runs southeast-northwest to merge with the Wādī el-Gheweibeh. Between the hills on the south and west and the *wādīs* on the east and north sides of Kh. en-Naḥās lies a large flat area (Fig. 11), packed with ruins of walls, large buildings, miners' huts, and smelting furnaces, and black with great heaps of copper slag (see plan of Kh. en-Naḥās, Pl. 4). Great quantities of

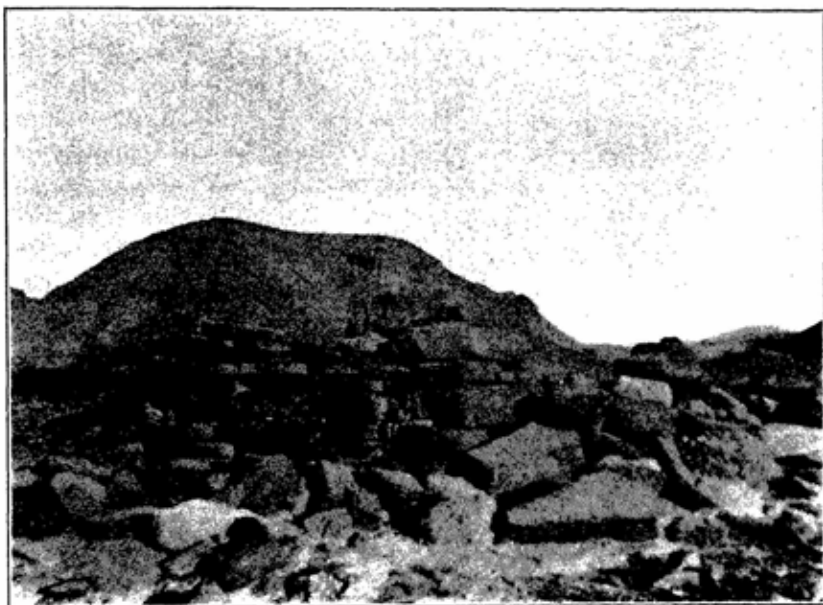


Fig. 12. Smelting furnace at Kh. en-Naḥās.

cupriferous sandstone are visible in the immediate vicinity. Mining the ore was a simple task. Overlooking the small *wādī* on the east side is a whole row of ruined buildings. The outer walls of some of them are still fairly intact. It is possible that some of them may have served as watch-towers, although this is unlikely in view of the general nature of the site, which did not require any protection from the east, and which depended for security against any major attack from the west upon the key fortress of Kh. Ḥamr Ifdān. There are numerous ruined furnaces, two of them near the south side, a square and a circular one, being still fairly intact. The first (Fig 12), built of roughly hewn blocks, is three metres square, being inaccurately represented on Pl. 4, and has two compartments one above the other. The

furnace is now 1.50 metres high. The inside of the lower compartment measured 2.5 by .8 metres. At the northwest end of Kh. en-Nahâs is a large enclosure, 76 metres square, with walls two metres thick. It is oriented northwest by southeast. Part of the wall at the northwest corner is still visible, being six courses high. Elsewhere the long lines of its walls are marked by heaps of fallen masonry. The entrance is probably on the northwest side, completely blocked by piles of fallen debris, representing towers guarding the entrance on the inside.<sup>61</sup> Inside the enclosure are also the ruins of the miners' huts and smelting furnaces, with heaps of slag between them. The enclosure makes the appearance of a large prison camp. It is probable that the mines and the smelting plants were manned with forced labor, both when the Edomites and Israelites controlled the 'Arabah and also in subsequent periods.<sup>61a</sup> The Edomites are known to have engaged in the slave trade,<sup>62</sup> and whenever opportunity offered they took captives from the Judaeans.<sup>63</sup> When David conquered Edom, he enslaved the Edomites.<sup>64</sup> Solomon, who retained control of the 'Arabah, and who had introduced the corvée into Israel and enslaved the Canaanites,<sup>65</sup> would certainly not have hesitated to draft the Edomites into service at the mines.<sup>66</sup> From the time of David to that of Jehoshaphat, and from the time of Amaziah to that of Ahaz, the Edomites were subjected to Israelite domination, and it is likely that the miners and metal workers were forcibly recruited from their ranks. Living conditions in the 'Arabah being what they were and are, the laborers

<sup>61</sup> AA, pp. 218-9, and pl. 16.

<sup>61a</sup> It is interesting to note in this connection that in patristic literature there are numerous references to the copper mines at Feinân which were worked by slave labor. be it that of Christians or criminals condemned there either for their convictions or their crimes. Eusebius refers to the early Christians who were condemned to the copper mines at Feinân; Eusebius, *Historia ecclesiastica* VIII, 13, A, col. 775-6, and *Liber de martyribus Palaestinae* V, A, col. 1479-80. VII, B, col. 1483-4. VIII, A, col. 1487-8. D, col. 1489-90. XII, C, col. 1513-4, ed. Migne, *Patrologia Graecae*, vol. 20. Cf. also Eusebius, *Onomastikon der Biblischen Ortsnamen*, ed. Klosterman, pp. 80: 15, 81: 16, 114-5: 4, 168-9: 9-10; Athanasius, *Historia Arianorum ad Monachos*. col. 765-6 A, ed. Migne, *Patrologia Graecae*, vol. 25; Theodoretus Cyrensis, *Ecclesiastica Historia*, col. 1177-8 A, ed. Migne, *Patrologia Graecae*, vol. 82. Most of these references with quotations are given in ME II: 1, p. 310, n. 27. Cf. *The Geographical Journal*, Nov. 1930, pp. 372-3. I am indebted to Prof. James A. Montgomery, who first called my attention to the references in Eusebius.

<sup>62</sup> Amos 1, 6. 9; Montgomery, *Arabia and the Bible*, pp. 180-2.

<sup>63</sup> II Chron. 28, 17.

<sup>64</sup> II Sam. 8, 13-15; I Kings 11, 15-16.

<sup>65</sup> I Kings 5, 27-30; 9, 20-21; II Chron. 8, 8.

<sup>66</sup> *Bulletin* 55, p. 8.

who mined and smelted the copper were in all likelihood held to their tasks under compulsion.

At the present time there is very little water in the immediate vicinity of Kh. en-Nahâs. There is a small spring on the north side of Wâdî el-Ghweibeh opposite it, which was, however, insufficient for our own needs. We were compelled to send for water to 'Ain el-Ghweibeh. Some springs may have dried up or been buried. Even so, with the necessity for large quantities of water, which would have been available only during the rainy seasons, for the needs of the settlement at Kh. en-Nahâs, and in view of the heat which makes sedentary life unbearable in the 'Arabah during the summer and autumn, there is every reason to believe that the mining and smelting operations were carried on only during the winter and early spring. Just how the water was stored even during the brief periods of residence at the EI camps in the 'Arabah is not clear. No cisterns or reservoirs were found at most of the sites, with the exception of Mene'yyeh. It may be that the communities were dependent upon the waters which gathered in the *wâdîs* during the rainy seasons, when also the springs which existed flowed strongly, and others appeared for short periods. Much water may have been stored in huge jars. The possibility of water being brought to various camps must also be borne in mind, however, as we have seen.

Despite the suggestive name of Kh. en-Nahâs, which means the *copper-ruin*, none of the Bedouin who accompanied us had any idea that copper was to be found there, or that it had ever been mined and smelted, although they were generally aware of the location and name of the place. The copper mines of the 'Arabah will probably remain undisturbed for many more years to come. Copper can be imported into the Near East for much less than it would cost to obtain it from the 'Arabah.

Quantities of worn sherds were found on the surface at Kh. en-Nahâs, belonging to EI I-II. Almost all of them were from large, coarse vessels of various kinds, such as one might expect to find in a rude mining camp, where much of the pottery may have been locally made. No sherds earlier than the EI I-II ones were found. A small number of Nabataean sherds was picked up. Kh. en-Nahâs was cursorily visited by Musil in 1898,<sup>67</sup> and more recently by Kirkbride, Horsfield, Head, and Frank. With regard to the pottery of Kh. en-Nahâs, Frank correctly says that it appears older than Roman.<sup>68</sup> There was none of the fine Edomite ware there, which, I fear, together with Nabataean ware, he generally mistakes for Roman.

<sup>67</sup> ME II: 1, p. 298.

<sup>68</sup> AA, p. 218.



*March 26.* We left Kh. en-Naḥās at 6.30 a. m. and going south-southeast through a steep pass stopped at 7.25 a. m. at a small *rujm* on the top of the rise above Kh. en-Naḥās. Below it to the west, surrounded by hills on all sides except the east, and east-southeast sides, was the end of a large *wādī*, oriented east-southeast by west-northwest. It proved to be another mining and smelting center, known as Kh. Nqeib Aseimer (13). On the slopes of the hills on the south and north sides and in the flat area between

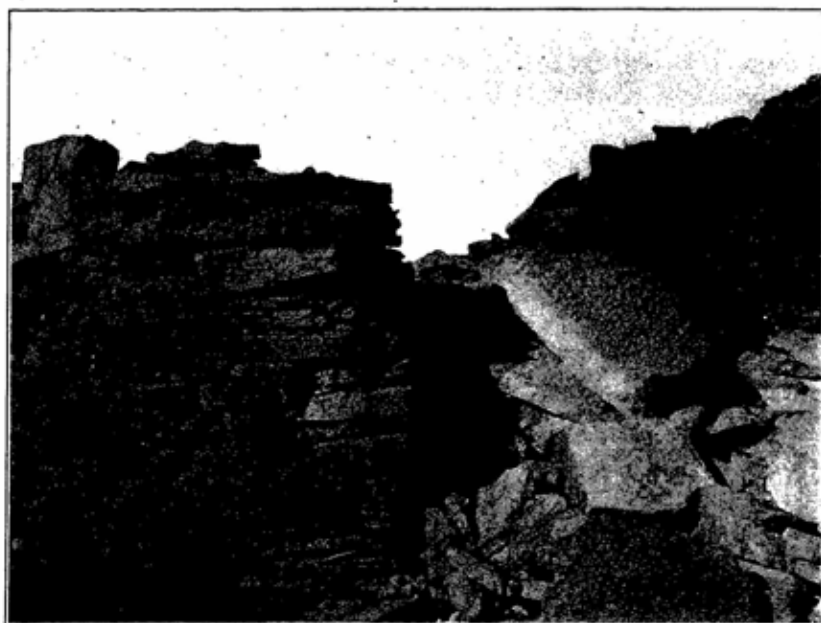


Fig. 13. Entrance to bottle-shaped furnace (?) at Kh. Nqeib Aseimer.

them were numerous ruins of dwellings and furnaces, with large and small slag heaps among them (see plan of Kh. Nqeib Aseimer, Pl. 5). Musil<sup>99</sup> seems to have known of the presence of copper in the vicinity of Kh. Nqeib Aseimer but does not seem to have visited the *khirbeh* itself. There was a particularly large number of ruins of small buildings and furnaces on the south-southwest side near the top of the ridge. One of them was a peculiarly shaped building, which looked like a bottle with a small narrow opening, between two rectangular columns of masonry. It may have been a furnace. Just how it looked on the inside could not be determined because of the mass of fallen stones (Fig. 13). There were the ruins of several large buildings

<sup>99</sup> ME II: 1, p. 299.

in the small valley between the hills. On the cross-ridge at the west-north-west end of the Kh. Nqeib Aseimer are the ruins of a large, irregularly shaped, more or less rectangular building, measuring 17.70 metres on the east side, 17 metres on the west side, 9.30 metres on the south side, and 11.1 metres on the north side. The walls are preserved in some places to a height of nine courses, being built of roughly squared blocks of stone, with small

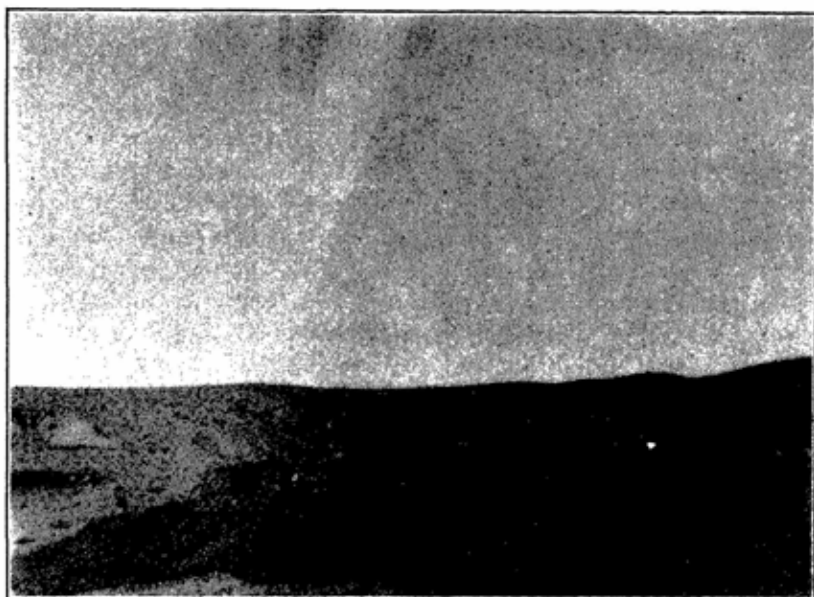


Fig. 14. Large smelting plant with slag-heaps in front of it, at Kh. Nqeib Aseimer.

stones between the rows, like Qasr Kharāneh, for instance.<sup>70</sup> There seem to be two entrances in the east wall. There are three horizontal partitions on the inside, which divide the space into six compartments, serving originally perhaps as furnaces. Three windows are apparent, one in the north wall near the east end, one in the west wall at the south end, and one near the center of the south wall. There are small piles of slag inside the building and very large slag heaps in front of it (Fig. 14). There are large masses of copper-bearing sandstone in the immediate vicinity. From the evidence offered by this building it becomes apparent that many of the large buildings at Kh. Nqeib Aseimer and elsewhere in these mining and smelting centers

<sup>70</sup> AJA XXXVII: 3, pl. XXXIX: 2.

may not have been residences, but may have housed a number of smelting furnaces under one roof. Numerous specimens of cupriferous sandstone and of mixed cuprite and malachite were collected. The latter, according to Mr. G. S. Blake, Geological Adviser of the Government of Palestine, represent the true quality ore that was smelted by the ancients, containing probably about 40% copper.

To judge from the nature of the construction of the buildings at Kh. Nqeib Aseimer, they would seem to be mediaeval Arabic in origin. They are certainly different from the building types found in EI I-II mining and smelting centers elsewhere in the 'Arabah. Neither EI I-II nor Nabataean sherds were found, which is surprising in view of the proximity of Kh. en-Nahâs, but a considerable number of mediaeval Arabic sherds were found. We must conclude therefore that this site was occupied only during the mediaeval Arabic period. Feinân, which is less than seven kilometres south-southeast of Kh. Nqeib Aseimer, is the only other site in the 'Arabah where smelting activities were possibly carried on also during the mediaeval Arabic period. No source of water supply was visible at Kh. Nqeib Aseimer. It is possible that water was transported there from Feinân, as well as to some of the other mining and smelting centers we have dealt with. Economic necessity forced the exploitation of the mines in the 'Arabah under the most difficult and adverse conditions, just as in Sinai.<sup>71</sup>

Leaving Kh. Nqeib Aseimer at 9.05 a. m., we headed south-southeast and arrived at Feinân (14) at 11.15 a. m. Feinân is a tremendous site, a large part of which is on the north side of the Wādī el-Gheweir, as the lower part of the Wādī ed-Dathneh is called before it joins the Wādī Dānā to form the Wādī Ifdân. There are large ruins also on both sides of the Wādī esh-Sheqer,<sup>72</sup> which coming from the south joins the Wādī el-Gheweir. An abundance of water flowing through these *wādīs* irrigates a large cultivated area, which, however, is smaller today than it was in the Nabataean period. To the east an important track leads through the Wādī Dānā to the highlands of Edom. As has often been pointed out, Feinân is to be identified with the Biblical Pūnōn, one of the stations of the Exodus, mentioned in Numbers 33, 42. Immediately north of the Wādī el-Gheweir is the large hill, Kh. Feinân, which dominates the site, and which is completely covered with a mass of ruins in a parlous state, including those of several Byzantine structures. When Musil visited Feinân in 1898 he saw remains of several rectan-

<sup>71</sup> Flinders Petrie, *op. cit.*, pp. 118-121.

<sup>72</sup> Frank calls it the *wādī el-jeker*, AA, p. 222; for plans of Feinân see ME II; 1, p. 278, fig. 150; AA, pl. 19; RB 1900, p. 28.

gular structures on top of the hill.<sup>73</sup> Immediately west of the hill is a ruined basilica.<sup>74</sup> We knew already from Musil's finds that Feinân was the center of a copper mining and smelting district. On the east, south, and southwest slopes of the hill pieces and heaps of copper slag were found, as well as numerous pieces of copper-bearing sandstone. We did not, however, find the main source of the copper ore and believe that the specimens we found were imported from elsewhere,<sup>75</sup> although Musil reports seeing the shaft of a mine on the southwest slope of the hill.<sup>76</sup> On the southwest side of the hill Frank reports seeing a circular smelting furnace 2.50 metres in diameter and 2.50 metres high.<sup>77</sup> There are copper slag heaps on the south side of the Wādī el-Gheweir, between the Wādī esh-Sheqer and the *birkeh*, mill, and connecting aqueduct to the west of it.<sup>78</sup> Subsequently, we discovered an extensively worked mine, called Umm el-'Amad,<sup>78a</sup> situated between Shôbek and Feinân, from which we believe the copper ore was brought to Feinân to be smelted because of the excellent water supply there.

A careful search for sherds was made throughout the entire site of Feinân, but particularly on the top and slopes of the mound. A sufficient number was collected to establish the approximate dates of the various settlements there. The pottery finds indicate a sedentary occupation of Feinân from the end of the Early Bronze down to the first part of the Middle Bronze Age, that is, approximately from 2200-1800 B.C. Only a handful of such sherds was found, which is not surprising in view of the numerous large settlements built above this early Bronze Age one in subsequent centuries of occupation. The next sedentary occupation of Feinân commences with the beginning of the Early Iron Age and extends down to the middle, or perhaps down to the end of EI II. The following period of occupation belongs to the Nabataeans. From that time on Feinân was almost continuously settled, being occupied in the Roman, Byzantine, and mediaeval Arabic periods, with some small settlements in modern times, which, however, were only of a semi-sedentary character. It is difficult to say in just which periods copper mining and smelting activities were carried on at Feinân, or in connection with Feinân. It seems fairly certain, in view of the proximity of Feinân to the Early Iron Age mining and smelting centers dealt with above, and in view of the exact similarity of its EI I-II sherds to the sherds found at these places, that smelting

<sup>73</sup> ME II: 2, pp. 293-8; AA, pp. 221-4.

<sup>74</sup> ME II: 2, p. 296.

<sup>75</sup> ME II: 1, p. 294.

<sup>77</sup> AA, p. 222.

<sup>76</sup> AA, p. 222.

<sup>78</sup> ME II: 1, p. 292, fig. 162; pp. 294-6; AA, p. 225.

<sup>78a</sup> See below, p. 90 f.

activities were carried on at Feinân during the Early Iron Age. It is possible also that copper was mined in the vicinity and smelted at Feinân during the period extending from the end of Early Bronze to the beginning of Middle Bronze, to judge from the sherds found. If so, it is the only place thus far discovered in the 'Arabah and in the rest of Edom where copper was mined and smelted in this period. In view of the close relationship between Edom and Sinai,<sup>79</sup> it is indeed remarkable that we did not find more copper mining sites which were worked about 2000 B. C. The mines of Şerābîţ el-Khâdim in Sinai had their first important development under the third dynasty in the reign of Snefru, then a period of intensive exploitation under the 12th dynasty, and were reopened by the Pharaohs of the 18th and 19th dynasties.<sup>80</sup> These mines, where to be sure the precious turquoise gems were particularly sought after rather than the copper, were worked by annual expeditions sent out from Egypt during the spring.<sup>81</sup> This resembles the conditions in the 'Arabah, where, as we have suggested, the mines were worked during the winter and early spring seasons only. The possibility of the connection of the Bronze Age Feinân with the contemporary sites in Sinai is heightened by the fact that the Bronze Age trade-route which we have been able to trace now in Eastern Palestine down through Edom seems to turn westward at Feinân, leading to Sinai.<sup>82</sup>

Large quantities of Nabataean sherds were found at Feinân. Whether or not the Nabataeans engaged in copper mining and smelting activities there is difficult to determine. We know that the Nabataeans engaged in such activities on a large scale, as is evident from the extensive workings at Şabrah, about seven kilometres south-southeast of Petra. Small quantities of Nabataean sherds were found, as we have seen, at Kh. en-Naḥâs, Kh. el-Ghewēibeh, and Kh. el-Jāriyeh, but to judge from the great preponderance of Early Iron Age sherds at these places the likelihood is that they were exploited for mining purposes during the Early Iron Age only. The Nabataean sherds may have come from herdsmen's tents or small police-posts, or from passing caravans. The possibility of small-scale mining and smelting operations at these places during the Nabataean period must be reckoned with, improbable as it seems

<sup>79</sup> *Bulletin* 53, p. 16; 55, p. 9; RB 1934, p. 430, n. 5. In connection with the Bronze Age settlement at Feinân, it is interesting to note that the Egyptian Sinuhe spent a year and a half at the beginning of the twentieth century B. C. in Kedem, east of the Jordan and the Dead Sea; cf. Breasted, *Ancient Records of Egypt*, I, p. 238.

<sup>80</sup> Olmstead, *History of Palestine and Syria*, pp. 54. 57; Barrois, "The Mines of Sinai," *Harvard Theological Review*, 1932, p. 113.

<sup>81</sup> *Harvard Theological Review*, 1932, p. 113; Flinders Petrie, *op. cit.*, pp. 118-121.

<sup>82</sup> See below, pp. 44. 104.

in view of the very small number of Nabataean sherds. It is also difficult to determine whether or not the Romans engaged in smelting activities at Feinân-Phaino,<sup>82a</sup> although it seems quite likely that they did. There was a large Roman settlement there, as is evidenced by the ruins of numerous Roman structures and by large quantities of Roman sherds. That the Romans carried on mining activities in the 'Arabah is shown by a Latin inscription with Greek additions above a Nabataean text, scratched on a stone block found at "the northeast corner of the Red Sea" by Frank.<sup>83</sup> Mining and smelting activities may have been carried on at Feinân also during the Byzantine and mediaeval Arabic periods, when there were large settlements there. In view of the nearness of the large mining center at Kh. Nqeib Aseimer, which flourished in the mediaeval Arabic period, it seems likely that mining activities were carried on at Feinân also during that period. The same gaps exist in the history of settlement at Feinân which we were subsequently to establish for the rest of Edom, and which correspond to the results obtained the preceding year for the history of Moab. There were gaps in the history of the sedentary occupation of Feinân from the eighteenth to the thirteenth century B. C., and from approximately the seventh to the third century B. C. It is important to emphasize that the communities residing at Feinân during the various periods are to be regarded as permanent ones, remaining there the entire year round.

*March 27.* We left Feinân at 7.30 a. m. and headed south-southwest for Bîr Madhkûr. Large stretches of formerly cultivated fields had to be crossed as we passed through the outskirts of Feinân. Skirting the foothills to the east, we moved on steadily through a desolate area, crossing numerous small and large *wâdis*. Among them were Wâdî Berwaş, Wâdî Abû Sakâkîn, Wâdî Nejdiyyeh, Wâdî Namalah, and Wâdî el-Qnei.<sup>84</sup> There is an important path leading up through the Wâdî Namalah and over the Neqb Namalah through the Sîq Namalah to el-Bâred and Petra. Although we later on got down as far as el-Bâred from Petra, shortness of time and physical exhaustion prevented us from examining the Sîq Namalah.<sup>85</sup> The Arq eş-Şahbân south of the Wâdî Abû Sakâkîn was most difficult to traverse, covered as it was with great black boulders. It was 6 p. m. before we arrived at Bîr Madhkûr (15), about 24 kilometres south-southwest of Feinân. Approaching it we passed through numerous formerly cultivated fields strewn with Nabataean sherds.

<sup>82a</sup> ME II: 1, p. 310, n. 27; AA II, pp. 24, 26, 49, 64 f.

<sup>83</sup> *Forschungen und Fortschritte*, 1934, pp. 244-5; see below n. 111.

<sup>84</sup> ME II: 2, pp. 216-7.

<sup>85</sup> ME II: 2, pp. 218-9.

There were two large ruins at Bîr Madhkûr <sup>86</sup> (see plan of Bîr Madhkûr, Pl. 6). At the east end of the site is a large caravanserai measuring 30 metres square, with four square(?) corner towers. It is in an exceedingly ruined state, the lines of its walls being determined with difficulty. Part of the southwest corner tower is still intact. About 20 metres northeast of the caravanserai, Kh. Madhkûr, is Bîr Madhkûr, a deep water-hole originally enclosed in masonry, some of the cut stones of which are still visible. A number of shrubs and trees grow nearby. About 34 metres to the east-southeast are the ruins of another structure, oriented north-south and measuring at the present time 30 by 26 metres. The ruins are in such a state that it is almost impossible to determine what they originally represented. In all probability they belong to a *birkeh*, situated as they are on the side of a small, dry *wādī* which bends by them on the north and east. Several hundred metres east of the caravanserai is a small spring. There was an extraordinarily large amount of Nabataean sherds of the most variegated types strewn all over the surface of the site. Glass, coins, a number of small pottery objects similar to those found at Kh. el-Moreighah (see Pl. 30b), the exact nature of which is still obscure because of the fragmentary condition in which they were found, lamp fragments, and tiles were also found there. The amount of pottery found seems to be altogether too great for the size of the settlement at Bîr Madhkûr. It is quite possible that there were pottery kilns there which supplied pottery to Petra, about ten kilometres southeast of it. In support of this idea are considerable ash heaps near the south end of the site.<sup>87</sup> Leading from Bîr Madhkûr to the southeast are clearly marked trails, which lead directly to Petra. The next morning, when we passed the point a few kilometres below Bîr Madhkûr where a number of small *wādīs* coming from the Petra region converge in the delta of Wādī Mūsā, we found many Nabataean sherds which had undoubtedly been washed down from Petra. Bîr Madhkûr is another one of the Nabataean stations which mark the Nabataean caravan route in the 'Arabah, and it was one of the most important of them. It gave direct access to Petra, the most important city of the Nabataean kingdom, and it was on the direct route from 'Aqabah to Feinân, whence it continued northward to eṭ-Ṭelâḥ and northwestward to el-Ḥoṣb. Bîr Madhkûr was subsequently occupied by a Roman garrison, which, however, seems for a long time to have used Nabataean pottery, because very few sherds were found which could be definitely characterized as Roman. Most of the coins found

<sup>86</sup> AA, p. 228, and pl. 24. Alt, AA II, pp. 24. 26. 31. 47, suggests the identification of Bîr Madhkûr with Moa.

<sup>87</sup> AA, p. 228.

were in too poor a state to yield anything legible even after the most careful cleaning. A number of them, however, belonged to the fourth century A. D. One of them was a coin of Constantinus I, 306-337 A. D. The obverse read IMP CONSTANTINUS PF AUG, beneath which was a bust of the emperor, draped, laureate, looking to right; the reverse read (SOLI IN) VICTO CO(MITI), beneath which was Sol, radiate, standing, holding a globe, facing left. Another coin was one of Constantius II, 337-361 A. D. The obverse showed the diademed head of the emperor looking right, and above it the legend (CONSTAN)TIUS AUG; the reverse read (G)LORIA EXERCITUS, under which were depicted two soldiers standing, with a standard between them. Two other coins were sufficiently clear to establish only that they too were probably Roman coins belonging to the fourth century A. D. Bir Madhkûr, it is thus seen, continued for a considerable period after the downfall of the Nabataeans to be an important Roman post,<sup>88</sup> whose inhabitants evidently continued to use Nabataean types of pottery. Several rims and bases of fine glass vessels were also found, the date of which we could not determine, but which could well have been Nabataean in origin because of their similarity to Nabataean pottery forms.

*March 28.* Leaving Bir Madhkûr at 8.30 a. m., we passed the mouth of Wādī Mūsā, and continuing southwestward arrived at 10.30 a. m. at 'Ain eṭ-Ṭaiyibeh, a small spring rising in the Wādī eṭ-Ṭaiyibeh. We then moved on to Kh. eṭ-Ṭaiyibeh (16) situated at the eastern end of the small plain extending in front of the Wādī eṭ-Ṭaiyibeh. It is a completely ruined caravanserai, oriented southeast by northwest and measuring 27 by 23 metres. There were four corner towers, built like the walls proper, of rudely cut sandstone blocks (Fig. 15). The thickness of the walls could not be ascertained, nor the entrance located.<sup>89</sup> Very few sherds were found, except a few scraps of Nabataean pottery, the rest of them having evidently been washed away or covered up. Immediately to the east of Kh. eṭ-Ṭaiyibeh are three water holes, Biyār eṭ-Ṭaiyibeh, around each of which grew clumps of reeds (Fig. 16). Kh. eṭ-Ṭaiyibeh was probably occupied by the Romans after the downfall of the Nabataeans and has been identified by Alt with Aphro.<sup>90</sup> It is the southern counterpart of Kh. Bir Madhkûr and guards a track leading to Petra. Leaving Kh. eṭ-Ṭaiyibeh at 2.00 p. m., we returned to the 'Arabah, stopping in the late afternoon at Burj el-Heib, a long low hill in the center of the 'Arabah, where there was good grazing for the camels.

<sup>88</sup> *Forschungen und Fortschritte*, 1934, pp. 244-5.

<sup>89</sup> Cf. AA. p. 230, and pl. 22B. AA II, pp. 24. 26. 36.

<sup>90</sup> Alt, *Forschungen und Fortschritte*, p. 245; AA II, pp. 24. 26. 35-6.



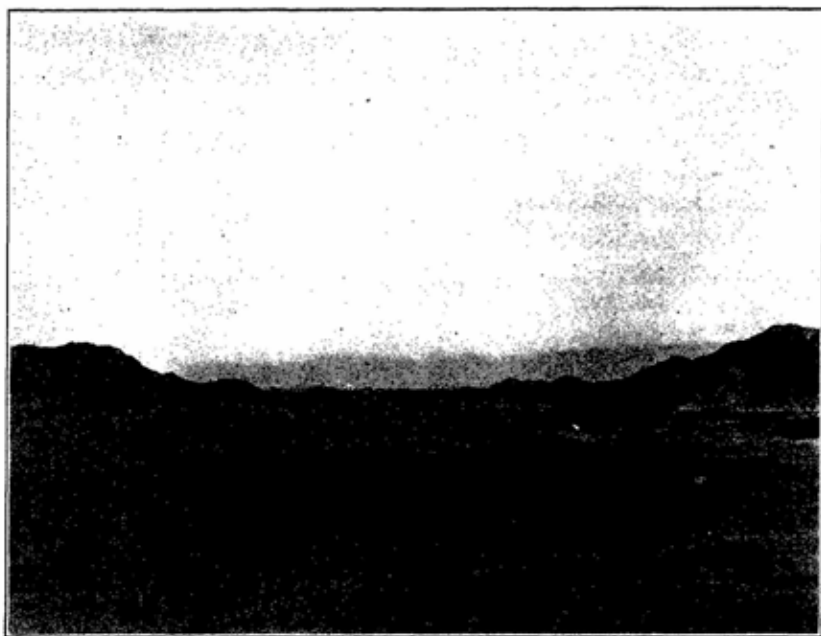


Fig. 15. Kh. eṭ-Ṭaiyibeh.

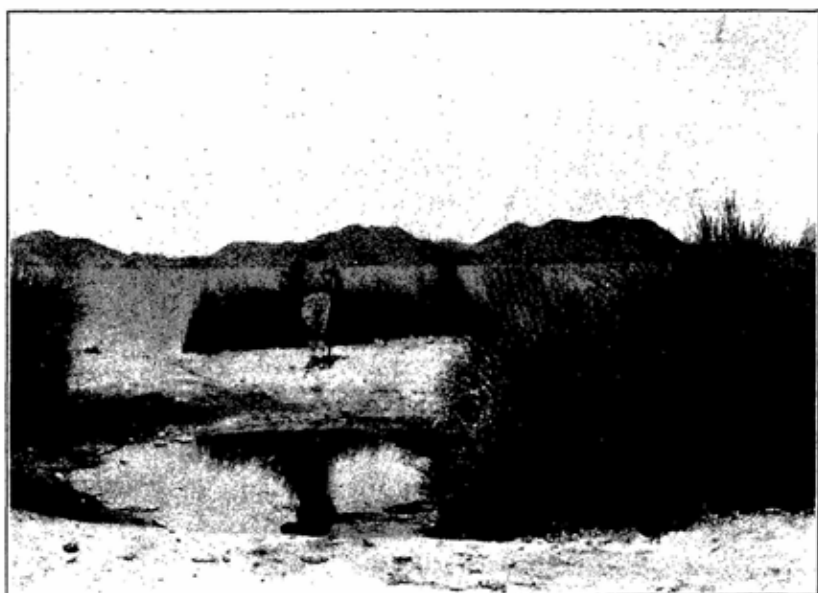


Fig. 16. Bīr eṭ-Ṭaiyibeh.

March 29. Leaving at 6.45 a. m., we arrived at 'Ain Gharandel (17) on the eastern side of the 'Arabah. The spring rises about 250 metres east of the mouth of the Wādī Gharandel and is distinguished by a number of palm trees which grow near it (Fig. 17). Immediately below the spring is a small, cemented Turkish *birkeh*, into which the water was led through a cemented channel. Pool and channel are in a semi-ruinous condition now. In Naba-



Fig. 17. Wādī Gharandel, looking west.

taean and Roman times the water must have been led through a conduit to a *birkeh* near the caravanserai, situated in the small plain in front of the mouth of the *wādī*. We could not plan the caravanserai, little more than the outline of its walls being now visible. It was originally about 45 metres square, with four corner towers, the entrance being on the east side. There are traces of a number of walls of various other buildings.<sup>91</sup> A small number of Nabataean sherds was found, indicating that this place too was originally a Nabataean station on the important Nabataean trade-route which led through the 'Arabah. The drifting sands and the spring floods have covered up or swept

<sup>91</sup> ME II: 2, pp. 195-6, fig. 142 for plan.

away most of the sherds. Gharandel was also occupied during the Roman period, when it was known as Ariddela.<sup>92</sup>

We left Gharandel at 1.30 p. m. and crossing to the western side of the 'Arabah through an extensive sandy belt proceeded southward, eventually reaching and following the course of the Wādī Sa'īdiyyīn. We halted at 5.00 p. m. in a sandy area, near which some shrubs and bushes provided grazing for the camels.

*March 30.* We left at 6.45 a. m., and at 8.45 a. m. came to a large, ruined earthwork called Ḥafriyat Ghadyān (18).<sup>93</sup> It is a large, circular earthwork, about 70 metres in diameter, which has the appearance of being a crude dam. Its floor is lower than the surface of the surrounding plain. We found no sherds. We did find, however, numerous pieces of slag, indicating that at one time smelting operations had been carried on here. We did not discover the source of the ore, but it is undoubtedly to be found somewhere in the foothills immediately to the west of Ḥafriyat Ghadyān. Some specimens of cupriferous sandstone and of limonite (iron ore) were found on the surface. Below and above the circular earthwork there was a long line of small circular pits, ranging from five to fifteen metres in diameter, with floor levels which either still are or evidently once were lower than the surface of the ground surrounding them.<sup>94</sup> Only a short distance away, at Ghadyān, there is an abundance of water, and it is possible that here at Ḥafriyat Ghadyān, there is a considerable underground supply which when tapped could be caught and stored in these large and small circular earthworks. By digging shallow channels the rain water also could be led into them. It may be that this scheme was resorted to in some of the other mining and smelting centers we have discussed above. To judge from its proximity to Ghadyān, which, as we shall see, was originally Nabataean, it may be that Ḥafriyat Ghadyān was also originally Nabataean and that the smelting operations were carried on there during the Nabataean period. A small group of men could have been sent from Ghadyān to mine the nearby copper and smelt it on the spot. There is evidently some iron ore also in the nearby foothills, because several specimens of limonite (iron ore) were found on the surface. We shall see that at Ṣabrah, which was worked by the Nabataeans, there were large quantities of copper and rich deposits of iron ore.

<sup>92</sup> Alt, *Forschungen und Fortschritte*, p. 245; ME II: 2, p. 247, n. 20; AA II, pp. 24, 26, 29, 30.

<sup>93</sup> AA, p. 250.

<sup>94</sup> AA, pp. 240-1, 250.

We left Hafriyat Ghadyân at 9.00 a. m., arriving at Ghadyân (19) at 9.45 a. m. There are the ruins of a former Turkish police post there and the bare remains of an ancient caravanserai, almost completely covered with debris.<sup>95</sup> The importance of Ghadyân lies in the fact that there is a large number of wells and springs there, with a practically unlimited water supply. They are situated at the northwestern end of Qâ' Tâbah, a large mud flat, which becomes impassable in the winter and early spring. Some of the wells are dug through approximately half a metre of solid rock, while others penetrate several metres through earth and rock before the plentiful underground water supply is reached. Near some of them are stone troughs. One strong spring has created a swampy area around it. The entire surrounding region is covered with coarse grass and reeds and bushes, which provide excellent grazing for numerous herds of camels and goats. A careful search of the area around the caravanserai revealed only a few Nabataean sherds,<sup>96</sup> several pieces of slag, and a number of fossils similar to others found at Hafriyat Ghadyân and subsequently near Mt. Nebo. There are no traces at Ghadyân of a settlement earlier than the Nabataean. The caravanserai is situated very near the western foothills of the 'Arabah, and it was between it and the foothills that the sherds and the slag were found. The ore deposits must be situated in the adjacent foothills. There were some pieces of cupriferous sandstone on the surface. There is no reason for believing that in historical times, or at least in the Early Iron Age, the Gulf of 'Aqabah extended as far north as Ghadyân, where it has been supposed by some that Ezion-Geber was located.<sup>97</sup> The presence of the Nabataean-Roman site of Aila on the present shore-line of the northern end of the Gulf of 'Aqabah means that the sea would have had to recede all the way from Ghadyân to its present position within five centuries at the most, if Ezion-Geber is to be identified with Ghadyân. The presence of fossils at Ghadyân, as at Mt. Nebo, indicates nothing except for prehistoric times. The discovery of smelting sites and of Early Iron Age pottery on the present shore-line effectively proves that it has remained approximately where it was in the Early Iron Age, and that Ezion-Geber is to be sought somewhere along its length, as we shall show below.

We left Ghadyân at 1.00 p. m. The track mounted gradually on the Palestinian side of the 'Arabah, till, at about 2.30 p. m., we were among the gray

<sup>95</sup> ME II: 1, p. 254; II: 2, pp. 186-190; AA, pp. 232, 239-40, and fig. 35 A.

<sup>96</sup> Frank, AA, p. 239 calls them Roman sherds. Ghadyân = ad Dianam, AA II, pp. 24, 27, 56, 58.

<sup>97</sup> PEFA, 1914-5, p. 13; Phythian-Adams, *The Call of Israel*, p. 187; Gallinger, *Bibliisches Reallexikon*, p. 96; Montgomery, *Arabia and the Bible*, p. 177, n. 29.

and red sandstone hills above the 'Arabah. At 4.00 p. m. we came to the Jebel Mene'yyeh, a series of shale and reddish sandstone hills containing huge deposits of copper ore. Mene'yyeh (20) is the largest and richest copper mining and smelting center in the entire 'Arabah.<sup>98</sup> Entering the Wādī Mene'yyeh from the north, after passing a small *rujm* which may have been a watch-tower guarding the narrow entrance to the *wādī*, we came upon

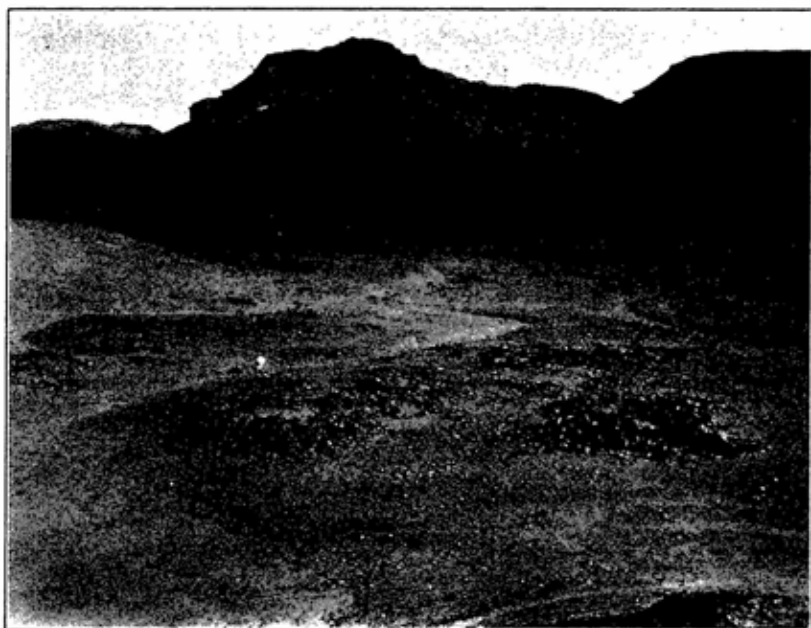


Fig. 18. Mene'yyeh, 1.

a typical mining and smelting center with about twenty furnaces and houses in an advanced state of ruin, between which were piles of slag (Fig. 18). Numerous sherds were found belonging to EI I-II. About a hundred yards directly south of it, across a small, dry intersecting *wādī*, was another such smelting center with approximately the same number of furnaces and houses and the same heaps of slag and types of pottery.<sup>99</sup> About 550 metres south-east of it we came upon a third such site, somewhat larger than the first two, but otherwise built in the same way. Altogether, we found seven such sites in

<sup>98</sup> ME II: 2, pp. 186-7; AA, pp. 233-4; 241-2.

<sup>99</sup> Frank, AA, pp. 241-2, reports having seen iron-ore deposits and Roman pottery, neither of which we found. There was a small quantity of Nabataean sherds.

the Mene'iyeh area, where copper mining and smelting operations were carried on (see plan of Mene'iyeh, Pl. 7). Mining the copper ore was a very simple task at Mene'iyeh, because it protruded all over the surface of the entire *wâdi*. Quantities of mixed cuprite and malachite and of highly cupriferous sandstone were collected.

Kh. Mene'iyeh is a great acropolis which guards the mining camps clustered about it and also protects the southern approach to the other mining sites in the 'Arabah. It is the southern counterpart of Kh. Ḥamr Ifdân. The acropolis is built on a high flat-topped, isolated hill, which rises sheer about

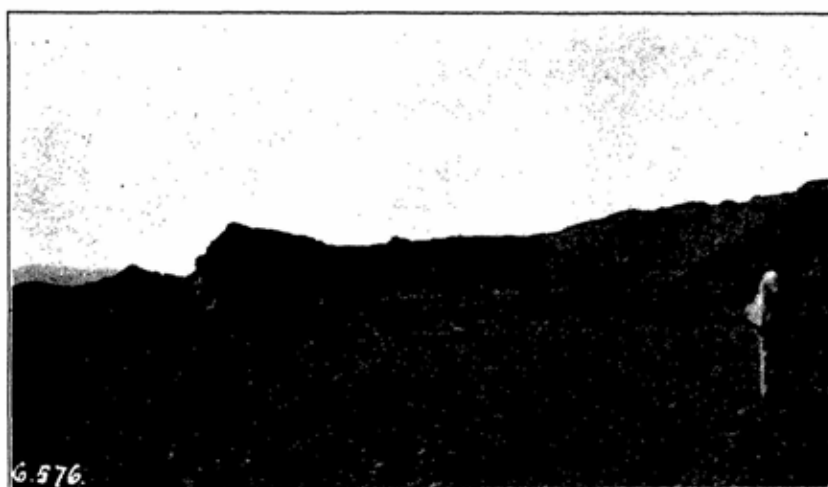


Fig. 19. Kh. Mene'iyeh (photographed by George Horsfield).

40 metres above the Wâdi Mene'iyeh (see plan of Mene'iyeh I, Pl. 8). The entire top of the hill was enclosed by a wall, parts of which are still preserved on the northwest and southeast sides. The wall is made of rough sandstone blocks. Its original width could not be exactly ascertained but may have been about a metre and a half. The acropolis is oriented north and south and measures approximately 336 by 125 metres. At the northern and southern ends of the acropolis are small natural prominences, shaped somewhat like horns, on top of which are ruins of what may originally have been watch-towers (Fig. 19). There are ruins of furnaces and other buildings within the acropolis area on top of the hill, together with heaps and innumerable pieces of slag, and large quantities of EI I-II sherds. The only ascent to the top of the acropolis hill is from the southeastern end. The outer wall enclosing

the acropolis, particularly on the west side, and the black slag heaps are clearly visible in an airplane picture of the site (Fig. 20, Frontispiece: I), which the Air Officer Commanding Palestine and Transjordan was kind enough to place at our disposal after we had located the site of Mene'iyeh on the airplane map in the possession of the military authorities. Kh. Mene'iyeh, within whose walls smelting operations were carried on, like the similar enclosure at Kh. en-Nahâs, makes the impression of being also a prison camp, where the drafted laborers were forcibly retained.

On the west side of the *wâdî*, opposite the acropolis hill, is another large isolated hill, whose top comes to a knife edge (Frontispiece: II), and below the north end of which is a semi-circular walled enclosure (see plan of Mene'iyeh II, Pl. 9). The ends of the wall, which are built high up against the steep sides of the hill, are 77 metres apart. A small dry *wâdî* now cuts through the enclosure from east to west. Originally, there was probably no break in the walls, because there seems to have been a diagonal wall thrown across the bed of the *wâdî*, which deflected the waters flowing through it in the winter and spring and prevented them from flowing through the enclosed area. There are also some indications that the water thus deflected was caught in an enclosed natural hollow (see Pl. 9). Near the center of the northern side of the large walled area is an entrance way, guarded by two ruined towers on either side of it. Inside of the walls are the ruins of houses and furnaces and great black heaps of slag, with numerous pieces of EI I-II pottery strewn about (Fig. 21). The nature of this large enclosure, with its thick walls of tumbled masonry, suggests that it too was used as a prison camp, in which the members of the *corvée* were held to their arduous tasks. We found no water whatsoever in the entire Mene'iyeh area. There seem to have been, as we have just seen, some measures taken to store up a water supply during the period of activity at the mines. We believe that most of the supplies, including food, fuel, and perhaps even water were brought to this and other mining centers by trains of camels and donkeys, which returned laden with the smelted ore. In connection with one of the Egyptian annual mining expeditions to Sinai, Egyptian records indicate that a train of 500 donkeys in charge of 43 peasants was used to maintain a steady flow of supplies, including food and water, to the various mining camps there.<sup>100</sup> A similar organization took care of many of the needs of the mining camps in the 'Arabah. The copper produced was transported then to various points, much of it going to Ezion-Geber, whence it would be taken by caravans to Arabia or by ship to Ophir in exchange for other products. The identification of the Solomonic port city of Ezion-Geber with Mene'iyeh by

<sup>100</sup> Flinders Petrie, *Researches in Sinai*, pp. 109-121.

Phythian-Adams,<sup>101</sup> who correctly discards the identification of Ezion-Geber with Ghadyân, is to be rejected for the reasons we have given above with regard to Ghadyân. Phythian-Adams lays much too much importance upon the fairy tale told to Musil by his guide with regard to an ancient city on the site of Mene'iyyeh, whose inhabitants possessed many ships. They offended Allah, who caused a long torrential downpour of rain to descend upon the

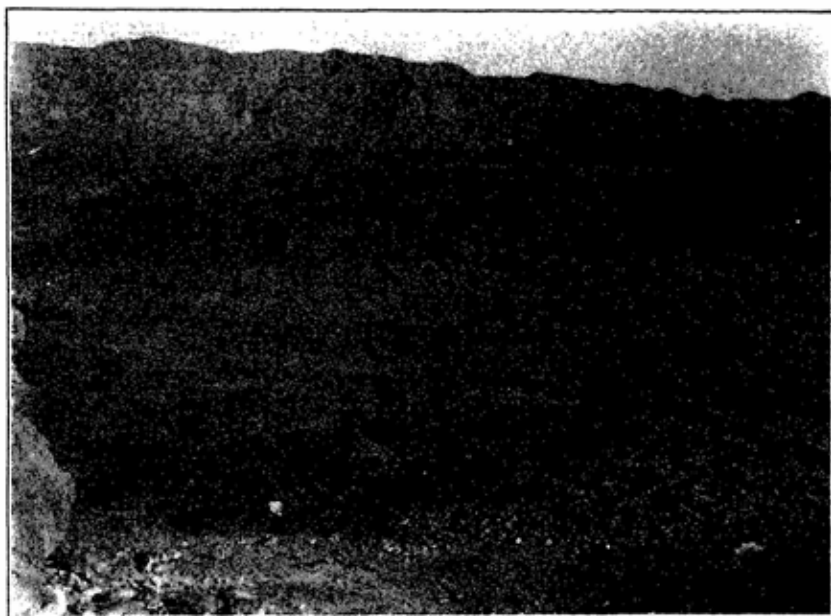


Fig. 21. Walled enclosure at Mene'iyyeh.

city, with the result that it was completely destroyed. Furthermore the Wādī Mene'iyyeh and the sea, which till then came up as far as Mene'iyyeh, were so choked with boulders that the sea retreated to its present position in the Gulf of 'Aqabah.<sup>102</sup> Musil's guide was probably answering leading questions, which sought confirmation of a preconceived notion rather than factual information.

*March 31.* Leaving at 9.00 a. m. we followed the course of the Wādī Mene'iyyeh till we reached the 'Arabah again. We continued southward, passing on the right Bîr Handîs, which we did not visit. At 11.00 a. m. we came upon a soft, sandy flat, called Sabkhah Defiyeh, which in winter time

<sup>101</sup> *The Call of Israel*, pp. 187-8.

<sup>102</sup> ME II: 2, pp. 186-90.



must be a sea of mud. At 11.30 p. m. we came to a shallow water hole (21), 'Ain Defiyeh (Fig. 22), in the middle of this area, whose waters were sulphurous but drinkable.<sup>103</sup> It was the last stop we made before reaching 'Aqabah. Leaving at 2.00 p. m. we rode steadily southward, arriving at the police-station in 'Aqabah (22) at 5.00 p. m. We were most hospitably received and remained there till April 6.

At first we examined the northeastern coast of the Gulf of 'Aqabah, even



Fig. 22. 'Ain Defiyeh.

penetrating several kilometres into the Ḥejâz, but found nothing except a comparatively modern watch-tower that guards the summit of the hill, which comes down practically to the very edge of the Gulf of 'Aqabah at the point where the Transjordan and Ḥejâz borders meet. It is called el-Breidsh <sup>104</sup> (23). About a kilometre west-northwest of 'Aqabah we came upon a very

<sup>103</sup> ME II: 2, p. 188. Frank, AA, pp. 242-3, at Rujm Ḥadîd, south of 'Ain Defiyeh and west of Wādî Yitm, found copper slag and sherds similar to those of Mene'tyyeh. We can therefore assign Rujm Ḥadîd to EI I-II—another reason for not identifying either Ghadyân or Mene'tyyeh with Ezion-Geber.

<sup>104</sup> ME II: 1, p. 260; AA, p. 245, and fig. 43.

large site, thickly strewn with sherds, which has been correctly identified with the Roman Aila<sup>105</sup> (24). The site was, however, originally Nabataean,<sup>105a</sup> being covered with large quantities of Nabataean sherds of all kinds. In addition there were large quantities of Roman, Byzantine, and mediaeval Arabic sherds. Some fragments of glass were found, which are probably Roman in origin. A few coins were found, only one of which yielded partly to cleaning. It could be made out as a Roman coin, belonging to the fourth

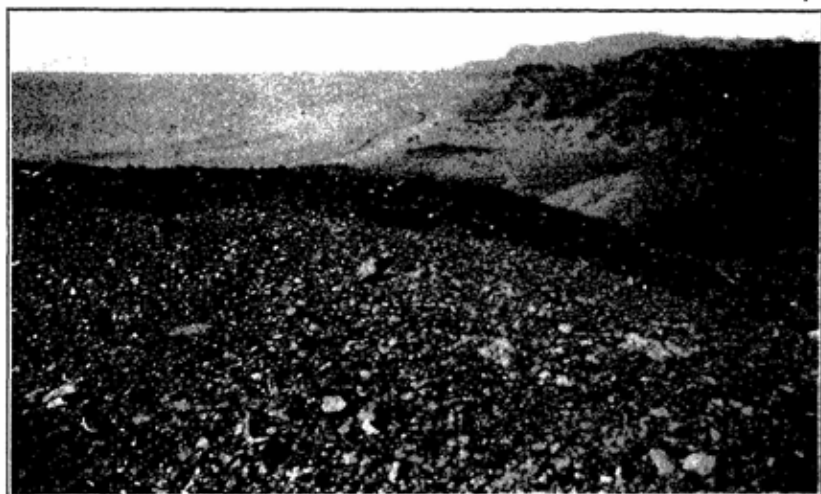


Fig. 23. Copper slag near Mrashshash, on hillside above Gulf of 'Aqabah.

century A. D. Aila is the southern end of the Nabataean trade-route, which led thence westward to Sinai<sup>105b</sup> and eastward and southward to Arabia.<sup>105c</sup> No sherds earlier than the Nabataean ones were found at Aila, but they may be buried deep under the sands.<sup>106</sup> We were unable to find any traces of Ezion-Geber and Elath, which must have been situated on what is approximately the present shore-line of the northern end of the Gulf of 'Aqabah. On a subsequent trip, however, on July 11, a very short distance from where we imagine Ezion-Geber must have been situated we succeeded in finding two copper smelting sites (25) on the foothills which run down to the very edge of the water at the northwestern end of the Gulf of 'Aqabah (Fig. 23). They

<sup>105</sup> ME II: 1, pp. 260. 305-6, n. 16; Alt, *Forschungen und Fortschritte*, 1934, p. 245; *Bulletin* 55, p. 10; AA, p. 244; AA II, pp. 24. 26. 27. 47.

<sup>105a</sup> Rostovtzeff, *Caravan Cities*, p. 27.

<sup>105b</sup> *Harvard Theological Review* 1932, pp. 102. 107. 118.

<sup>105c</sup> Montgomery, *Arabia and the Bible*, pp. 33-4; MA II: 1, p. 107 f.

<sup>106</sup> AA, p. 244.

are situated a few hundred metres south of the Palestine police-post at Mrashshash. No sherds were found, nor did we locate the source of the copper ore itself, which must be in the immediate vicinity. It seems reasonable to assume that these smelting sites go back to the Early Iron Age, to which period we have been able to assign almost all of the mining and smelting centers in the 'Arabah. Proof positive, however, has now been furnished by Frank. Although he missed these two smelting sites below Mrashshash, he did discover a site near them strewn with sherds which enable us to fix the approximate location of Ezion-Geber and the date of these smelting works beyond all question of doubt. Immediately north of the present shore-line of the Gulf of 'Aqabah, and just west of the boundary line between Palestine and Transjordan, on a small flat hill called Tell el-Kheleifi, Frank found a number of sherds which "appeared to be very old" to him. From his photograph of them, however, we can unhesitatingly designate them as Edomite, belonging to EI I-II.<sup>107</sup> As Frank correctly assumes,<sup>108</sup> this site must have been connected with the Solomonian port city of Ezion-Geber, most of the traces of which have disappeared. The discovery of this Early Iron Age site on the northwestern shore-line of the Gulf of 'Aqabah and the smelting sites near them reveals that from Umm el-'Amad (154), which is between Shôbek and Feinân and which we visited subsequently, and from the mining area centering around Kh. Hamr Ifdân and Kh. en-Nahâs, there can be traced a long line of copper ore deposits in the 'Arabah which continues all the way down to the northwestern corner of the Gulf of 'Aqabah. It seems quite possible that the copper deposits in Sinai are connected geologically with those in the 'Arabah. It is interesting to note in this connection that about ten kilometres southwest of Mrashshash in the Wâdî Tâbah, above the Egyptian police station, Frank found copper deposits which had been mined in ancient times.<sup>109</sup> Going about eight kilometres into the interior through the Wâdî el-Merâh, which forms a large delta about a kilometre southwest of the island Jezîret Far'ûn, he found additional copper deposits which had been tapped through pits and shafts. As in the Wâdî Tâbah, the ore seems to have been smelted elsewhere.<sup>110</sup> A Nabataean inscription was found among these copper deposits.<sup>111</sup>

The mineral deposits in the 'Arabah, which were most intensively worked during the Early Iron Age, make intelligible the passage in Deut. 8, 9 where the Promised Land is described to the Israelites as "a land where you may eat

<sup>107</sup> AA, pp. 243-4, and fig. 41 B, 42 A.

<sup>108</sup> AA, p. 247.

<sup>109</sup> AA, p. 224.

<sup>110</sup> AA, p. 248.

<sup>111</sup> AA, p. 248; see above, n. 83. AA II, pp. 60-64.

food without stint, lacking nothing; a land whose stones contain iron and out of whose hills you can dig copper."<sup>111a</sup> Long before the advent of the Israelites, the presence of the mineral deposits in the 'Arabah was known and the mines were exploited by the Kenites and the Edomites, to whom they were related through the Kenizites.<sup>112</sup> It was the Kenites, a tribe of smiths as their name indicates,<sup>113</sup> who probably first imparted to the Israelites information about the ore deposits in the 'Arabah. Saul was mindful of the close relationship between them<sup>114</sup> and his own people, and spared them in his battles with the Amalekites.<sup>115</sup> That the Kenites were at home in Edom and in the 'Arabah is indicated by Balaam's punning proverb with regard to them in Num. 24, 21, "Everlasting is thy habitation, and set in the Rock (*Sela'*) is thy Nest (*Qen*)."<sup>116</sup> The pun on *Qen* and Kenite (*Qenite*) is obvious, and *Sela'* is to be identified with Umm el-Biyârah in Petra.<sup>117</sup> Confirmed wanderers, the Kenites seem to have retained throughout their history a Bedouin form of life like the related Rechabites<sup>118</sup> and Jerahmeelites.<sup>119</sup> The presence of individual Kenites in Judah and Israel, pictured as wandering about from place to place, can be understood when it is realized that they were itinerant smiths.<sup>120</sup>

In addition to copper, the expedition discovered large deposits of iron ore at Šabrah, south of Petra. The 'Arabah with its minerals and access to the trade of Arabia and the commerce of the Red Sea was the main cause of the bitter warfare between Israel and Edom. The lucrative routes of commerce coming from Arabia led northward to Damascus, westward to Gaza, and eastward via Dûmah and Teimâ to the Euphrates and the Persian Gulf. Arabia was for Palestine, as Montgomery points out, "not merely a back door but a

<sup>111a</sup> Numbers 21, 9 also reflects the knowledge of the presence of copper in the 'Arabah; cf. *Bulletin* 55, p. 17.

<sup>112</sup> Gen. 15, 19; 36, 10. 11. 42.

<sup>113</sup> Hastings, *Dictionary of the Bible*, p. 834; a lance made by a Kenite (*Qenite*), is known as a *Qayin*, II Sam. 21, 16. Tûbal-Cain was the "forger of copper and iron utensils," Gen. 4, 22. Cain was probably a smith, cf. Montgomery, *Arabia and the Bible*, p. 6; APB, ed. 3, p. 206, n. 7.

<sup>114</sup> Judges 1, 16; 4, 11.

<sup>115</sup> I Sam. 15, 6.

<sup>116</sup> Cf. Obadiah 1, 3. 4.

<sup>117</sup> ANNUAL XIV, p. 77, n. 1a; Phythian-Adams, *The Call of Israel*, pp. 190-2; Olmstead, *The History of Palestine and Syria*, p. 254.

<sup>118</sup> I Chron. 2, 55; Jer. 35, 6-10.

<sup>119</sup> Gen. 46, 10; I Chron. 2, 25-55; I Sam. 27, 10.

<sup>120</sup> Judges 1, 16; 4, 11. 17; 5, 24; cf. Doughty, *Arabia Deserta* II, p. 656, under "Šāny"; Musil, *Arabia Deserta*, p. 281.

front portal."<sup>121</sup> The nation that sat across the trade-routes from Arabia commanded the avenues of wealth and power. The wealth of the Edomites and the rapid rise of the Nabataeans who succeeded them may be explained by their control of these trade-routes. The power of the Nabataeans extended at one time as far north as Damascus and as far south as Medâ'in Şâleḥ.<sup>121a</sup> The prosperous periods in the history of the United Kingdom and then of Judah have a direct relationship to the periods during which they controlled the 'Arabah and a port on the Red Sea.

It is probable that David carried on the exploitation of the mines in the 'Arabah after he had subjugated and enslaved the Edomites.<sup>122</sup> The pottery which was used, however, continued to be Edomite, just as Nabataean pottery continued to be used after the Romans had occupied the Nabataean sites in the 'Arabah. Neither David nor any of his successors, who gained control of the 'Arabah and its mines at various times, made any attempt apparently to introduce other types of pottery than the Edomites, who were probably compelled<sup>123</sup> to work for them, were accustomed to make. The exploitation of the mines in the 'Arabah was undoubtedly intensified during the reign of Solomon, who maintained a firm hold over the 'Arabah. He had, to be sure, to contend with guerilla warfare waged against him by Hadad, who had returned to Edom from Egypt, having fled thither from David, when the latter conquered Edom.<sup>124</sup> There was a remarkable economic development in Israel during the reign of Solomon, who established himself as the great middleman for the overland trade between Egypt and the Hittite and Aramaean empires, which passed through Palestine,<sup>125</sup> and who also trafficked with Arabia.<sup>126</sup> It was he, we believe, who more than any of his predecessors or successors realized the promise made to Israel and found great wealth by working the mines in the 'Arabah. Solomon was one of the first great copper kings, and by far the most famous of them all. Quantities of copper must have been used in the construction of the temple and the palace in Jerusalem,<sup>127</sup> but most of it must have served as Solomon's main export and as his merchants' main stock in trade.<sup>128</sup> His Tarshish-ships,<sup>129</sup> built and manned with the help of

<sup>121</sup> Montgomery, *Arabia and the Bible*, pp. 52. 73. 175-9.

<sup>121a</sup> MA II: 1, pp. 107 ff.

<sup>122</sup> See above, p. 28, n. 64; PEFQS 1934, p. 183.

<sup>123</sup> See above, p. 28, notes 62-5.

<sup>124</sup> I Kings 11, 17-19. 25.

<sup>125</sup> I Kings 10, 28. 29; Montgomery, *Arabia and the Bible*, pp. 176-80.

<sup>126</sup> I Kings 10, 1. 2; cf. Ezek. 27, 22.

<sup>127</sup> I Kings 9, 10.

<sup>128</sup> PEFQS 1933, p. 138; 1934, pp. 183-4; Phythian-Adams, *The Call of Israel*, p. 188.

<sup>129</sup> I Kings 10, 22; 22, 49; Montgomery, *Arabia and the Bible*, p. 177. n. 30. I Kings

the Phoenicians,<sup>130</sup> sailed from Ezion-Geber laden with copper and brought back in exchange gold, silver, ivory, perfumes, costly woods, and other precious articles obtained in Ophir.<sup>131</sup> Close to where Ezion-Geber must have been situated were the smelting sites (25) below Mrashshash, from which Solomon probably obtained some of the copper used as an article of exchange in the Red Sea traffic.<sup>132</sup>

After Solomon's death, the Red Sea traffic seems to have languished, and Solomon's fleet to have disappeared. When we next hear of Edom, it was ruled by Jehoshaphat through a deputy governor.<sup>133</sup> One may assume therefore that Judah had retained control over Edom from the time of Solomon on and continued to exploit the mines in the 'Arabah, perhaps only in a limited fashion. Internal peace having been established between Israel and Judah,<sup>134</sup> signalized by the marriage of Jehoshaphat's son, Joram, and Athaliah, daughter of Ahab,<sup>135</sup> Jehoshaphat attempted to reenter the Red Sea trade in which Solomon had so successfully engaged. He accordingly had a number of Tarshish-ships built to sail to Ophir, to trade copper, as we may assume, for the products of Arabia. Unfortunately, however, the ships were broken on the rocks at Ezion-Geber,<sup>136</sup> in which wise Solomon's fleet also may have finally been accounted for. Ahaziah, Ahab's son and successor for a brief period, offered then to cooperate in the Red-Sea enterprise, but Jehoshaphat refused, and the venture was abandoned.<sup>137</sup> It was probably towards the end of his reign that the Edomites made a raid against Engedi.<sup>138</sup> During the

10, 22 evidently refers to trips to Ophir, cf. I Kings 10, 11; 9, 28. II Chron. 9, 21 should read in the first half as well as in the second half of the sentence "Tarshish-ships," instead of "ships sailing to Tarshish"; cf. II Chron. 20, 36. 37, where the same change should be made; cf. Curtis and Madsen, *Chronicles*, ad. loc.; Hastings, *Dictionary of the Bible*, p. 684.

<sup>130</sup> I Kings 9, 26-8.

<sup>131</sup> For the location of Ophir on the western coast of Arabia cf. Montgomery, *Arabia and the Bible*, pp. 38-9.

<sup>132</sup> Trade on the Red Sea goes back to the Old Kingdom, Egypt having long trafficked down the Red Sea to Punt; cf. Montgomery, *Arabia and the Bible*, p. 176, n. 28; Olmstead, *History of Palestine and Syria*, p. 340.

<sup>133</sup> I Kings 22, 48. He is wrongly called the "king of Edom" in II Kings 3, 9. 12. It was not until the days of Joram, the son of Jehoshaphat, that Edom was able to set up its own king, II Kings 8, 20; cf. Gressmann, *Älteste Geschichtsschreibung*, p. 287; Olmstead, *History of Palestine and Syria*, pp. 390-1; Eissfeldt, in *Die Heilige Schrift des Alten Testaments*, ed. 4, ad. loc.

<sup>134</sup> I Kings 22, 45.

<sup>135</sup> II Kings 8, 18.

<sup>136</sup> I Kings 22, 49.

<sup>137</sup> I Kings 22, 48-50.

<sup>138</sup> II Chron. 20, 1 f.; in verse 2 read Edom for Aram, as has been frequently suggested.

reign of his son, Joram, Edom revolted, set up a king in place of the former Judaeen deputy,<sup>130</sup> and probably regained control of the 'Arabah.

For about half a century Judah was unable to push forward again into Edom, which during this period evidently worked the mines in the 'Arabah for itself. It was, however, not long to enjoy its independence. Amaziah of Judah waged successful war against it, capturing Sela', whose name he changed to Joktheel.<sup>140</sup> His capable son, Uzziah, completed the conquest of Edom begun by his father, it being recorded that he recovered Elath from Edom.<sup>141</sup> Thus he acquired once again access to the trade of the Red Sea and Arabia, using probably as an article of exchange the copper he obtained from the mines in the 'Arabah. The marked upswing in the fortunes of Judah during his long reign<sup>142</sup> may be attributed in part to the wealth obtained from the 'Arabah. Edom then remained subject to Judah till the time of Ahaz, when it regained possession of Elath.<sup>143</sup> After that time Judah was never again strong enough to dispute Edom's control over the 'Arabah, which Edom itself became progressively less able to hold and exploit. The ceramic evidence from the Early Iron Age sites in the 'Arabah is in agreement, as we shall see, with that obtained from the Early Iron Age sites in the hill-country of Edom proper. It indicates, in consonance with the literary evidence, that from the eighth century on there was a rapid disintegration of the power of Edom. This fact may be due in part to the long warfare with Judah, which left Edom in a weakened condition, but is primarily to be attributed to a period of aggrandizement by Assyrian and later on Babylonian armies against Edom and Arabia,<sup>144</sup> which commenced particularly with Tiglath Pileser III and

<sup>130</sup> II Kings 8, 20-22.

<sup>140</sup> II Kings 14, 7; II Chron. 25, 11. 12.

<sup>141</sup> II Chron. 26, 1. 2; II Kings 14, 22; cf. above, pp. 47-8.

<sup>142</sup> II Chron. 26, 1-14.

<sup>143</sup> II Kings 16, 6. The verse should be amended to read: "At that time the king of Edom recovered Elath for Edom and drove out the Judaeans from Elath; and the Edomites came to Elath and dwelt there to this day." The word Rezin should be omitted, and Edom read consistently for Aram. The verb רָצַח would be peculiar to this verse if it meant that Elath had been recovered by Rezin; and the Syrians, never having held Elath, could hardly recover it. The verb is used correctly in II Kings 14, 22 with regard to Uzziah, who recovered Elath from Edom for Judah; cf. Eissfeldt, *Die Heilige Schrift des Alten Testaments*, ed. 4, to II Kings 16, 6. During the reign of Ahaz the Edomites, taking advantage of the Syro-Ephraimitic war, broke into Judah and carried off captives, according to II Chron. 28, 17.

<sup>144</sup> The history of the growing power of Assyria and then Babylonia in Arabia has been brilliantly dealt with recently in Dougherty, *The Sealand of Ancient Arabia*, and Montgomery, *Arabia and the Bible*.

culminated with the reign of Nabonidus, who for a number of years made Teimā his chief residence.<sup>145</sup> As a result, the rich trade from Arabia, which formed the life blood of the Edomite body politic,<sup>146</sup> was impeded and cut off, and particularly so after the appearance of the Nabataeans upon the scene. For the Nabataeans the 'Arabah was important mainly as an avenue along which their caravans could pass, and for the sake of which they built caravanserais by water holes along the way. In the subsequent Roman period the 'Arabah remained an important highway. After Trajan's reign the center of trade moved gradually from Petra to Boṣrā, affecting naturally also the traffic in the 'Arabah.<sup>147</sup>

*April 6.* Mr. Upchurch, who had driven us to Kerak and returned to Jerusalem, transported the joint expedition of the Transjordan Department of Antiquities and the École Biblique Française of Jerusalem to Jebel Ramm in the Ḥismeh Valley and then met us at 'Aqabah on April 5 with our truck. Leaving 'Aqabah at 10.00 a. m. on April 6 and taking with us sixteen laborers, whom we had hired for the Jebel Ramm expedition, we drove northward on the first of a number of trips devoted to the examination of Edom east of the 'Arabah. We followed the ancient caravan route, which leads from 'Aqabah northward to the hill country of Edom, via the Wādī Yitm, across the northwest section of the Ḥismeh Valley, up the Neqb esh-Shtār, and then over the Jebel esh-Shera'.<sup>148</sup> The road goes northward for about six kilometres along the edge of the hills which merge into the 'Arabah, and then turns eastward into the Wādī Yitm.<sup>149</sup> After proceeding for about ten kilometres through the Wādī Yitm we turned off southeast into the Wādī 'Imrān,<sup>150</sup> through which an automobile track has been laid out leading to

<sup>145</sup> Economic reasons, among others, influenced Nabonidus to establish his residence in Teimā, occupying a key position in the trans-desert trade; Dougherty, *The Scaland of Ancient Arabia*, pp. 118-20; Montgomery, *Arabia and the Bible*, pp. 64-8; cf. Isa. 21, 13, 14; Job 6, 19.

<sup>146</sup> Even under Assyrian domination, the wealth of Edom was still considerable, to judge from the tribute paid to Esarhaddon. Edom paid 12 manas of silver, in comparison with ten manas of silver paid by Judah, 2 manas of gold paid by Ammon, and one mana of gold by Moab; cf. Olmstead, *History of Palestine and Syria*, pp. 484-5.

<sup>147</sup> Rostovtzeff, *Caravan Cities*, pp. 34, 51.

<sup>148</sup> RB 1932, p. 582; ME II: 1, p. 188; PA I, pp. 189, 470-3.

<sup>149</sup> RB 1932, pp. 582, 594; ME II: 1, pp. 18, 260-3; II: 2, pp. 188-9; it is also known as the Wādī Ithm, PA I, pp. 471-3. Musil, ME II: 1, pp. 18, 260, records the presence of a Tell Umm Gurr and a ruined watch-tower, Rujm el-Fattih, close by the entrance to the Wādī el-Yitm.

<sup>150</sup> RB 1932, p. 594.



the police post at Jebel Iram,<sup>151</sup> or Jebel Ramm,<sup>152</sup> as it is variously called. At the point where the Wādī Yitm and the Wādī 'Imrān meet, on a rise dominating the crossroads, is a large ruin, the local name of which we were unable to ascertain at the time. We did not stop to examine it then, because of our intention to return to it for a thorough study later on, which, unfortunately, we were unable to do. According to Musil<sup>153</sup> it is known as Qaşr el-Kitharā, evidently the same site mentioned by Lawrence as Kethera or Kethira.<sup>154</sup> To the north of this ruin is 'Ain el-Kharaq. The site has been examined by Mr. George Horsfield and Père R. Savignac. Large quantities of Nabataean sherds were found, in addition to Roman and Byzantine sherds. The *qaşr* was a caravanserai on the Nabataean, and later Roman and Byzantine trade-route leading from Aila to Ma'ān, and from Aila to Jebel Ramm and eastward into Arabia proper.<sup>155</sup> Negotiating finally the difficult sand stretches on the way, we arrived at Jebel Ramm (26) at 1.30 p. m. Across the plain, near the road, is an Arab Legion police post, guarding the border between Transjordan and the Hejāz. The location of the post is made possible by the strong 'Ain Shellāleh and by fourteen other small springs, which seep through between the granite base and the sandstone body of the Jebel Ramm. They make the Wādī Shellāleh and Wādī Themīleh possible for human habitation.<sup>156</sup> It was first in the Nabataean period that the full possibilities of the water supply available in this corner of the Ḥismeh Valley were taken advantage of. Between the Wādī Shellāleh and the Wādī Themīleh are the traces of walls of a comparatively large number of buildings, including a *birkeh*, and the remains of a very interesting, small Nabataean Temple,<sup>156a</sup> which Père Savignac was clearing at the time of our visit, while Mr. and Mrs. Horsfield were excavating some Nabataean graves. In addition Père Savignac made another<sup>157</sup> study of the inscriptions of the entire district,

<sup>151</sup> ME II: 2, p. 228; RB 1932, p. 584, n. 1.

<sup>152</sup> RB 1932, pp. 584-5; PA II, p. 333, n. 473.

<sup>153</sup> *Northern Hejāz*, p. 80.

<sup>154</sup> *Revolt in the Desert*, pp. 112-3.

<sup>155</sup> RB 1932, pp. 594-5. AA II, p. 28. Had we continued along the Wādī Yitm, we would have come to 'Ain el-Khāldeh (ME II: 1, p. 263; RB 1932, p. 595; PA II, p. 333.) Northeast of it are two ruined structures, which to judge from the pottery found there, and the nature of the building stones dressed with lines running at a 45 degree angle, were originally Nabataean (RB 1932, p. 592, pl. XIX). Roman and Byzantine pottery were also found there.

<sup>156</sup> RB 1932, pp. 586, fig. 1, 589, fig. 2; 1934, p. 573, pl. XXXV.

<sup>156a</sup> Doughty, *Arabia Deserta*, I, p. 55.

<sup>157</sup> RB 1932, pp. 581-597.

while Père Barrois prepared plans of the district and of the Nabataean temple and the sanctuary of Allat by 'Ain Shellâleh.<sup>158</sup> In addition to the Nabataean inscriptions, there are numerous Thamudic and Minaean inscriptions on rock surfaces by 'Ain Shellâleh, and on other rock surfaces in the Wâdis Shellâleh and Themîleh, and elsewhere in the adjoining Wâdî Ramm. Strewn over the surface of the ground, particularly by the ruins of the Nabataean temple, were large quantities of typical Nabataean sherds.

*April 7.* Walking southward through the Wâdî Ramm, we examined the east side of the Jebel Ramm below 'Ain and Wâdî Shellâleh. In addition to a number of springs issuing forth above the granite base of Jebel Ramm, we saw several large enclosures, built of huge sandstone boulders along its base. Near them and inside of them were numerous small *rujûm*, which were probably burial cairns. There was nothing to indicate the date of these enclosures. Skirting the Jebel Ramm, we turned west-northwest into the Wâdî er-Rummân. We examined it in vain for settlements of any kind. Retracing our steps, we crossed over the Wâdî Ramm to Jebel el-Khaz 'Alî. On its northeastern side is a large fissure (27) about four metres wide at the entrance, known as el-Khaz 'Alî.<sup>159</sup> On the sides of the walls of the fissure are numerous crude figures of human beings and animals and Thamudic and Arabic inscriptions, which have all been examined by Père Savignac.<sup>160</sup>

*April 8.* We left Jebel Ramm at 8.45 a. m., following the track leading northward to Kuweirah through the Hîsmeh Valley. The way led through sandy stretches dotted with dead bushes, and across great, dry mud-flats, which during the winter and spring must be impassable bogs, but across which, during the dry months of the year, cars can speed in chase of the mirages which dance in front of them. Rising sheer above the plain, sometimes to considerable heights, are numerous, great multi-coloured sandstone hills. At 10.00 a. m. we stopped at a hill known as Hadbet el-Ḥamrâ, where, as at 'Ain Shellâleh and el-Khaz 'Alî, Mr. R. G. Head had, during the 1929 locust campaign, which he directed in the Hîsmeh Valley, discovered a number of pictures and inscriptions carved in the sandstone walls on the northwest and west sides of the hill. Père Savignac subsequently copied a number of Thamudic inscriptions there.<sup>161</sup> Among the animals represented were a tiger (?), an ostrich, a horse, ibexes, and camels. Hadbet el-Ḥamrâ is to the

<sup>158</sup> RB 1934, pp. 572-591; cf. Lawrence, *The Seven Pillars of Wisdom*, 1935, p. 355.

<sup>159</sup> RB 1934, p. 581, n. 2.

<sup>160</sup> RB 1932, pp. 589, fig. 2, 590; 1934, pp. 580, fig. 5: 20-7, 581.

<sup>161</sup> RB 1934, pp. 580, nos. 28-34, 581.

left of the road leading to Kuweirah. About a kilometre to the north of it, on the right side of the road, is another chain of sandstone hills. Several hundred metres in front of the northernmost unit of this chain of hills was a small, square, completely ruined tower (28), which was originally Nabataean, to judge from the nature of its construction and the few Nabataean sherds which could be found. There were also a number of nondescript sherds, which may have been Byzantine. Several hundred metres south of

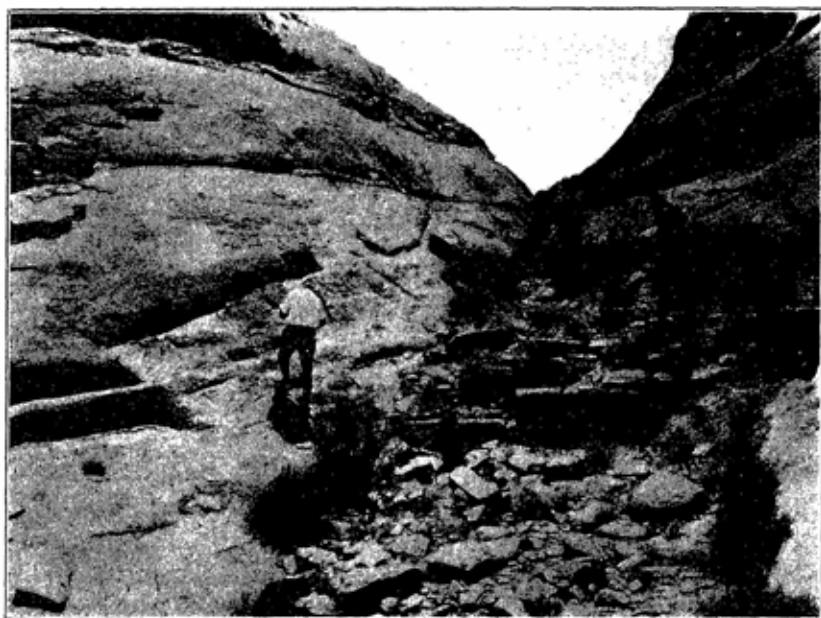


Fig. 24. Dam at Rekhemtein.

the *rujm* lies a small, gray sandstone hill, whose curved north side has been smoothed and hardened by the play of the elements, and perhaps to some extent by the hand of man. A small, wedge-shaped fissure near the east end of this side of the hill has been dammed up by a strong wall at its lower end (Fig. 24), creating thus an excellent reservoir for the rain water flowing through the fissure, which would otherwise have gone to waste. Channels cut into the sides of the hill on either side of the fissure led additional quantities of rain water into the reservoir and into a deep trough built inside the wall at its northern end, also to a small basin and to an auxiliary trough hewn out on the east side of the fissure near the wall of the reservoir. This auxiliary

trough was approached by seven steps hewn out in the hill-side. In a word, every available surface was utilized as a catch-basin for the rain water. A sufficient supply was obtained thus to provide for the needs of the small settlement, which is known today as Rekhemtein (28). The sides of the wall of the reservoir are fitted into grooves cut into the sides of the walls of the fissure. The wall is built in two sections, with a trough approximately seven metres deep between the two sections, which are plastered both inside and outside with three layers of plaster (see plan of Rekhemtein, Pl. 10). The method of conserving water supplies at Rekhemtein is an example of the industriousness and engineering skill of the Nabataeans, who could maintain themselves even in desert areas, where otherwise permanent settlements or small posts such as Rekhemtein would be impossible.

We had occasion subsequently on April 16 and 17 to examine the stretch of the Hismeh Valley extending eastward as far as Medowwerah, the southeasternmost Transjordan frontier post. Starting from Ma'ân at 10.00 a. m., we drove steadily southward through the desert following the line of the Hejâz railway, amazed at the destruction Lawrence and his men had visited upon it. We arrived at Medowwerah at 5.00 p. m. There is a spring there. The next morning we examined the foundation ruins of various buildings near the police-post, but found nothing except comparatively modern sherds. Because of the presence of a spring there, and because of its being situated on the ancient track which led to the great Nabataean center of Medâ'in Şâleh, we had hoped to find Nabataean sherds there, but were unsuccessful in our search. Leaving Medowwerah<sup>102</sup> at 6.10 a. m. on April 17, we drove steadily westward through the Hismeh Valley, until we reached Jebel Ramm, 51 miles away, at 9.50 a. m.

*April 8 (cont.).* From Rekhemtein we drove north-northwest to Kuweirah (29), where today there are a few Arabic houses and a police post. It is situated on the main Ma'ân-'Aqabah road, about twelve kilometres distant from Rekhemtein, and occupies a commanding position in the Hismeh Valley. Close to the police-post, to the east, is a much ruined caravanserai, 37.5 metres square, with traces of circular corner towers and foundations of rooms built against the walls on the inside. The walls are built of roughly cut sandstone blocks, with small stones between the various rows. In its present form the caravanserai seems to be mediaeval Arabic in origin, but it may well be built over an earlier structure. About 18 metres to the east of the caravanserai is a *birkeh*, measuring 32 by 17 metres. There is a spring, 'Ain Kuweirah, several

<sup>102</sup> Doughty, *Arabia Deserta* I, p. 58; MA I, pp. 53-4.

hundred metres south of the *birkeh* below the high sandstone hill, Jebel Kuweirah, which towers above Kuweirah to the south. The water was led to the southwest corner of the *birkeh* through an artificial channel, which served also as a catch basin for rain water from the ground which sloped down to it. A similar channel leading to the northeast corner of the *birkeh* served the same purpose of diverting the rain water into it. The *birkeh* is beautifully constructed of finely dressed, hard sandstone blocks. Its inside walls are covered with several layers of plaster.<sup>103</sup> Large quantities of mediaeval Arabic and Byzantine pottery were found, to which latter period the *birkeh* is probably to be ascribed. In addition there were some fragments of Roman pottery, including sigillata, and several scraps of Nabataean ware. On the northeastern edge of the top of Jebel Kuweirah<sup>104</sup> are the ruins of a small tower about eight metres square. A few indistinguishable sherds were found by it. Eighteen kilometres east-northeast of Kuweirah we came to a large cistern, hewn out of the rock at the bottom of the perpendicular face of a hill on the west side of the road. There may originally have been a small natural cave there, which was artificially enlarged. The rain water flowed into a depression near the south end of the top of the hill, and then down the east face of the hill into the cistern below at its base. Two Dushara niches were found in the face of the wall, north of the cistern, which is known as el-Menjir (30). A number of Nabataean sherds were found on the ground in front of the cistern. Other traces of Nabataean settlement there had disappeared. From el-Menjir we drove north-northeast towards the high, broken plateau land of ancient Edom, which thrusts itself upward suddenly from the Ḥismeh Valley. A ride of about ten kilometres, and we had ascended the well-made, cork-screw road leading up the Neqb esh-Shtâr to the high plateau land of the Jebel esh-Shera',<sup>105</sup> which fronts the Ḥismeh Valley.

*April 9.* On top of an elevation overlooking the Ḥismeh Valley, Kh. Neqb esh-Shtâr (31), or Kh. Râs en-Neqb as it is sometimes called, occupies a strategic position commanding the roadway leading from the Ḥismeh Valley to the Jebel esh-Shera' and the entire Edomite plateau. Immediately below Kh. Neqb esh-Shtâr<sup>106</sup> are visible Wādī Jedeid and the Wādī esh-Shtâr (Fig. 25). Kh. Neqb esh-Shtâr is built more or less in the form of a

<sup>103</sup> PA I, pp. 473-4. 495, fig. 545; ME II: 1, p. 265.

<sup>104</sup> It seems to be known also as Jebel esh-Shāfeh; cf. PA I, pp. 473-4.

<sup>105</sup> ME II: 1, p. 268; RB 1932, p. 583; Abel, *Géographie de la Palestine*, Vol. I., p. 283.

<sup>106</sup> ME II: 1, pp. 267-9.

decagonal oval, with the entrance on the east side between two large rectangular towers. The fortress measures approximately 130 by 117 metres. There appear to have been originally towers and buttresses strengthening the angles in the walls. The site is, however, in such an advanced state of ruin, that little more can be done now than to sketch the course of the outside walls of the fortress. The inside area is filled with a hopeless jumble of ruins, some of which have been turned into sheep folds and goat pens (see plan of

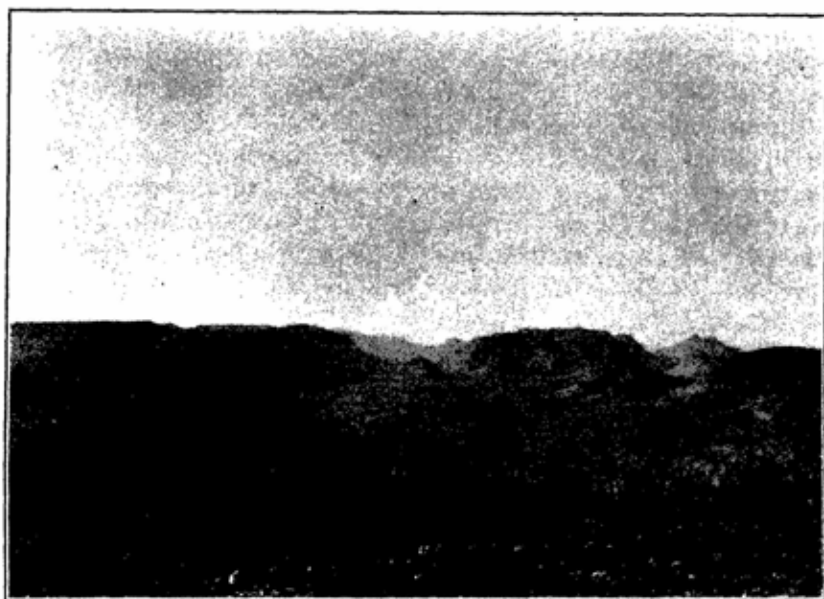


Fig. 25. The Hismeh Valley south of Neqb esh-Shtâr.

Kh. Neqb esh-Shtâr, Pl. 11). A number of Edomite EI I-II sherds were found, similar to those picked up at the EI sites in the 'Arabah. There were a number of coarse Edomite sherds, but most of the fragments belonged to rather fine, painted and burnished vessels similar to those found at Kh. Hamr Ifdân, and to a degree at Mene'yyeh. In addition to these Edomite sherds at Kh. Neqb esh-Shtâr there were some Nabataean and Byzantine sherds and quantities of mediaeval Arabic sherds. Kh. Neqb esh-Shtâr was one of several Edomite fortresses guarding the southern boundary of the Edomite plateau. About 25 metres south of the fortress is a ruined watch-tower about eight metres square, with a tumbled-in cistern on its west side. No sherds were found by the tower, which to judge from its rather well cut sandstone

blocks belongs to the Nabataean period or later.<sup>167</sup> The hillsides immediately below Kh. Neqb esh-Shtâr seem originally to have been terraced. We were told that there were two springs in the neighborhood, 'Ain ibn Sûrî and 'Ain Jemâm.

Several kilometres northeast of Kh. Neqb esh-Shtâr there is a small ruined site on the left side of the road, called Kh. el-Fuweileh (32), with 'Ain el-Fuweileh below it.<sup>168</sup> There are a number of ruined foundation walls and several ruined buildings, whose walls built of well cut sandstone blocks still rise to a height of three courses. Across the road to the east is a similar site (33), although somewhat larger. It is also called Kh. el-Fuweileh. One building has a paved floor, characteristic of numerous Nabataean and Roman sites.<sup>169</sup> There are a number of cave cisterns, such as those frequently made use of in Nabataean times. Nabataean, Byzantine, and mediaeval Arabic sherds were found in both sections of Kh. el-Fuweileh, including several pieces of Nabataean sigillata with reddish core. About a kilometre above these two sites are two small Nabataean sites, one on each side of the road.

Little more than a kilometre east-northeast of Kh. el-Fuweileh is Kh. esh-Shedeiyid<sup>170</sup> (34). It is situated on top of a hill, commanding a fine view over the Hîsmeh Valley and looking down on Kh. Neqb esh-Shtâr to the southwest. There are several springs within a radius of several kilometres around it: 'Ain el-'Aqeîqeh<sup>171</sup> (40) to the northeast and 'Ain el-Fuweileh to the west, with 'Ain Hedeiyib (35) almost immediately below it to the southeast. Fields cleared of stones and traces of numerous terraces were visible between Kh. Neqb esh-Shtâr and Kh. esh-Shedeiyid, testifying to former cultivation. Kh. esh-Shedeiyid turned out to be a great Edomite border fortress. It is surrounded by walls made of large, rudely shaped flint blocks and is oriented southeast by northwest (see plan of Kh. esh-Shedeiyid, Pl. 12). Its greatest measurements are 160 by 76 metres. The form is an irregular rectangle, and there are traces of revetments and buttresses supporting the bends in the north and south walls. At the northeast corner, built against the north wall, is a large ruined heap of stones, which originally formed a rectangular tower measuring 15 by 7 metres. Its outlines could barely be fixed. Built against the east wall is another large rectangular tower, measuring

<sup>167</sup> ME II: 1, p. 268.

<sup>168</sup> ME II: 2, pp. 230, 232.

<sup>169</sup> ANNUAL XIV, p. 12.

<sup>170</sup> ME II: 2, pp. 230-1. Musil places Kh. esh-Shedeiyid northwest of Kh. Neqb esh-Shtâr with 'Ain el-Beidâ a short distance below it to the north.

<sup>171</sup> ME II: 2, p. 230.

approximately 15 by 9 metres and supported by a very strong revetment. The walls of the revetment are practically intact on the south and east sides of the tower and slope inward and upward against the walls of the tower till they are flush with them. The north face of this tower, where the revetment has fallen away, reveals the fact that it was built on the header-stretcher system,<sup>172</sup> characteristic of the corners of the main structure at Bālū'ah in Moab. These towers probably were near the entrance to the fortress, the exact location of which cannot now be determined. Inside the walls there is a maze of ruined foundations. The slopes below the fortress were once carefully terraced. Long terrace walls are still visible below the fortress. Numerous Edomite EI I-II sherds were found. There were also a few Nabataean and mediaeval Arabic sherds and numerous small worked flints. Kh. esh-Shedeiyid and Kh. Neqb esh-Shtâr were built anew at the beginning of the Early Iron Age and were subsequently occupied by small Nabataean and later settlements. Comparatively little debris has piled up over them, and excavations would probably not be very productive, unless tombs were found. These and similar fortresses were probably never destroyed, but were simply abandoned and fell into ruin as a result of Assyrian and Babylonian aggrandizement, which gradually choked off and diverted the life-giving flow of trade from Arabia. By the fifth century B. C. the Nabataeans had little trouble in taking over most of Edom, whose population they rapidly absorbed. The elaborate system of border defences, most of them in sight of each other, which the Edomites developed, was adopted by the Nabataeans. As a matter of fact we shall see that almost invariably where there was an Edomite settlement it was succeeded by a Nabataean one. Just as the Nabataean trade route led from Arabia through the Ḥismeh Valley up the Neqb esh-Shtâr northward to Petra, so in the preceding Edomite period the caravans followed the same tracks, passing between Kh. Neqb esh-Shtâr and Kh. esh-Shedeiyid northward to Ṭawīlân and Sela' and other important Edomite centers.

*April 10.* From Kh. esh-Shedeiyid we proceeded southeastward along the edge of the Neqb, following in so far as possible the track made several years ago by the Transjordan Frontier Force, which is supposed to lead finally to Baṭn el-Ghûl on the Ḥejâz railway. About a kilometre southeast of Kh. esh-Shedeiyid we came upon a small, completely ruined Nabataean site on the edge of the Neqb, called Kh. Ḥedeiyib (35). Below it is 'Ain Ḥedeiyib. There were a few ruined walls on the site, and a small number of Nabataean sherds were found. About a kilometre southeast of it was a small ruined

<sup>172</sup> ANNUAL XIV, pp. 54, 55, fig. 23.



site, similarly named, where a few Byzantine and mediaeval and comparatively modern Arabic sherds were found.

About two kilometres farther east-southeast we came to a large ruined Nabataean site, on the east side of the esh-Shera' plateau, called Kh. el-Qaraneh (36). There were extensive foundation ruins, among which stood a large, ruined caravanserai, about 50 metres square,<sup>173</sup> with square corner towers. There was a gateway in the center of the north wall and a rectangular tower in the center of the south wall. There were traces of rooms built against the walls on the inside. Quantities of Nabataean sherds of all types were found on the site. Several hundred metres southwest of Kh. el-Qaraneh is a small, square, ruined watch-tower, commanding the approach from the Hismeh Valley. No sherds were found by this *rujm*, which in all probability belongs to the complex of Kh. el-Qaraneh. On the east side of Kh. el-Qaraneh is 'Ain Abū Moqreh,<sup>174</sup> with Bīr el-Qaraneh below it on the south side.

About six kilometres to the south, overlooking the Wādī et-Telājah, which leads into the Hismeh Valley, is the completely ruined Nabataean site of Kh. et-Telājah (37). There were but few vestiges of former settlements there, except some building stones, a few ruined walls, and a small number of Nabataean sherds, including several pieces of reddish-core sigillata.<sup>175</sup> Kh. et-Telājah was the southernmost settlement on the esh-Shera' plateau. Like the other Nabataean sites on this plateau thus far mentioned, it was a small agricultural settlement. About two and a half kilometres north-northeast of Kh. et-Telājah lies Kh. en-Naṣārā (38), situated in the center of an undulating countryside. It is an extensive, completely ruined Nabataean site, divided into two separate areas, one on top of a rise, the other some distance below it on the slope to the southeast. Numerous Nabataean sherds were picked up. There were many ruined foundation walls and building stones scattered about.<sup>176</sup>

*April 11.* Returning then to the 'Aqabah-Ma'ān road we drove from a point near Kh. el-Fuweileh about eight kilometres northeast to 'Ain and Kh. Abū el-Lesal<sup>177</sup> (39), called also Kh. Abū el-Lessan. It is a large, completely ruined Nabataean site built on top of a hill on the left side of the road. There was a small number of Nabataean sherds, including Nabataean

<sup>173</sup> Mr. Head's measurements of the caravanserai differ from those of Musil, ME II: 2, pp. 229-30, and fig. 152. Musil's plan shows rectangular towers on the east and west walls, which we did not see.

<sup>174</sup> ME II: 2, p. 229.

<sup>175</sup> ME II: 2, pp. 228-9.

<sup>176</sup> ME II: 2, p. 229.

<sup>177</sup> ME II: 2, p. 230.

sigillata and one piece of Nabataean rouletted ware. A Turkish encampment had been built on the site during the World War, and the spring had been enclosed in a cement basin.

Turning back for some distance along the main road, we struck off again into the rough, hilly country to the southeast, coming to Kh. el-'Aqeïqeh (40), a small ruined Nabataean site with one small, square building still standing and a number of ruined walls. A small quantity of worn Nabataean sherds was picked up. Below Kh. el-'Aqeïqeh to the southeast is 'Ain el-'Aqeïqeh.<sup>178</sup> In the Wādī el-'Aqeïqeh, a short distance to the north of it, is another small Nabataean site with the same name. Continuing several kilometres to the northeast, we came to a great, circular walled enclosure, called el-Me'eïqal (41), surrounding several acres of formerly tilled ground. A few indistinguishable sherds were found. About 500 metres below it to the west is 'Ain el-Me'eïqal. Continuing then along the high ground to the northeast, we came to Kh. Da'ûq (42), about five kilometres northeast of Kh. el-'Aqeïqeh.<sup>179</sup> It is a very large, ruined Nabataean site, covered with a large number of ruined buildings made of limestone and flint blocks. At the north and south ends of the main complex of buildings are several watch-towers. Large numbers of Nabataean sherds of all kinds were found. The southern end of the esh-Shera' plateau was intensively settled in the Nabataean period, being dotted with small and large Nabataean villages. It is noteworthy that none of them was enclosed with outer walls. They were situated in the interior of the highly organized Nabataean kingdom, which relied on its border defences to keep out possible attacks, in addition to strategically located central posts. Whole districts could, through signals visible from one border post to another, be informed of any impending danger.<sup>180</sup> The line of the southern edge of the Neqb of the Jebel esh-Shera' was not a boundary in the Nabataean period, as it was in the Edomite period, and did not have to be protected with strong fortresses such as Kh. Neqb esh-Shtâr and Kh. esh-Shedeïyid. The entire Hismeh Valley, as we have seen, was in the hands of the Nabataeans, obviating the necessity of border fortresses on the edge of the Neqb. With this system of strong border defences the Nabataeans were following in the footsteps of the Edomites. We shall see too that many Edomite sites were apparently located without regard for strategic, military reasons, being built because they were necessary as centers of agricultural districts or well located for purposes of trade. In Edom then, as subsequently in the Nabataean kingdom, the elaborate system of border

<sup>178</sup> ME II: 2, p. 230.<sup>179</sup> ME II: 2, p. 230.<sup>180</sup> ME II: 2, p. 232.

fortresses was more relied upon for the defence of the entire country than were the individual defences of separate towns, although these were not always absent. The military organization of Edom in the Early Iron Age bespeaks a country far more unified and closely knit together, apparently, than Palestine was in the same period.

From Kh. Da'ûq we returned to the 'Aqabah-Ma'ân road again, coming upon it a short distance above Kh. Abû Lesal. We drove then thirteen kilometres east-northeast to Kh. el-Moreighah (43), a very large Nabataean site situated on the top of a hill overlooking the Wādī and 'Ain el-Moreighah to the southwest. This is one of the best preserved Nabataean sites we investigated in all of the area of the Jebel esh-Shera'. It is a purely Nabataean site, with a considerable number of buildings crowded together in a large rectangular area (see plan of Kh. el-Moreighah, Pl. 13). The buildings are carefully constructed of basalt blocks. Many of the walls are still standing to a height of from three to seven courses. It is an open town, not surrounded by an outer wall, and protected in no wise, except by its position on the top of a hill, from attack. Kh. el-Moreighah is distinctive among the various Nabataean sites examined, because with the exception of Bîr Madhkûr in the 'Arabah we found there a richer and more varied collection of Nabataean pottery than at any other Nabataean site. The areas beyond the buildings and on the slopes below them, particularly on the south and east sides, were packed with Nabataean sherds and pottery objects of all kinds. Numerous lamp fragments and pieces of other objects, the nature of which is not clear in their fragmentary state, were found there. See Pl. 30 B showing lamp fragments, rouletted Nabataean ware, one piece of imported sigillata ware, and other, indeterminable pottery objects from Kh. el-Moreighah. There is every reason to believe that pottery kilns are to be found among the ruins of Kh. el-Moreighah. Kh. el-Moreighah was evidently an important commercial and manufacturing center. It is situated on a crossroads of trade-routes. To the east-northeast, about fourteen kilometres removed, lies Ma'ân; to the west-northwest lies Şadaqah (81) and a group of other Nabataean sites on the way to Petra; to the south it was connected with all the Nabataean places in the Jebel esh-Shera' discussed above and with the trade-route leading then ultimately to Arabia. In addition to the Nabataean period there was apparently only one period when Kh. el-Moreighah was occupied, and that was in the Early Iron Age, as evidenced by a few unmistakable EI I-II Edomite sherds.

We propose to treat the ancient sites on the southwestern part of the Jebel esh-Shera' at this point, instead of describing them in accordance with

the time of our visits to them. They will also be numbered consecutively on the map. Other districts will be similarly handled.

*May 16.* The southwestern part of the Jebel esh-Shera' could not be penetrated by car because of the exceeding roughness of the terrain. Leaving the car guarded by 'Alī Abū Ghôsh at a point on the road between Kh. Neqb es-Shtâr and Kh. el-Fuweileh, Mr. Head, the writer, and a local Arab with a donkey to carry supplies examined the edge of the Neqb west of Kh. Neqb esh-Shtâr. A half an hour's walk over a very difficult path brought us to a very small, completely ruined Nabataean site called Kh. Abū Naşûr (?) (44), with a small spring immediately below it. Forty minutes later we came to a small spring called 'Ain Jemmam (45), with a few patches of cultivation below it but no traces of any early settlement. Ten minutes later, at 4.05 p. m., we came to Kh. and 'Ain eş-Şarâh (46). The *khirbeh* is a very small, nondescript ruin, with no sherds present to date it. There were, however, traces of a stone conduit which brought the waters of the spring for a considerable distance to 'Ain el-Qanah (47). 'Ain eş-Şarâh must once have been much stronger than it is now, with hardly more than a trickle of water issuing forth from it. Almost all the way to 'Ain el-Qanah sections of the stone conduit could be seen, being carried by aqueducts over the numerous small fissures and *wâdis* crossing its path. The sides of the hill between the two springs were once terraced and cultivated, although they are completely desolate now. At 5.30 p. m. we arrived at 'Ain el-Qanah (47). Its waters too were diverted into a stone conduit, traces of which are still visible, leading southward down into the Hîsmeh valley. The conduit leading from 'Ain el-Qanah is apparently joined by that from 'Ain eş-Şarâh. We did not have time to follow the length of the conduit to determine its entire course, but we were told that it follows a track leading to el-Hêmeimeh,<sup>151</sup> the great Nabataean-Roman center in the Hîsmeh Valley about 17 kilometres south-southwest of 'Ain el-Qanah. El-Hêmeimeh has been visited by Mr. and Mrs. Horsfield and Mr. Head, who have picked up quantities of Nabataean sherds on the site. Above 'Ain el-Qanah is a small, completely ruined site, with no sherds present to help date it. Southwest of 'Ain el-Qanah, on the top of a high outspur on the very edge of the Neqb, we came upon a small, completely ruined watch-tower (48), which we called Rujm 'Ain el-Qanah. It commands a wonderful view over the Hîsmeh Valley; we had sighted it from Kh. Neqb esh-Shtâr. No sherds were found by it. It is probably a Nabataean watch-tower, although it may also be Roman.

<sup>151</sup> PA I, pp. 476-8; II, p. 333; AA, pp. 236-7; el-Hêmeimeh = Ammatha, AA II, pp. 24, 28.

*May 17.* As far as 'Ain el-Qanah we had been following a track that was below the top of the plateau west of Kh. Neqb esh-Shtâr. We climbed then from 'Ain el-Qanah to the top of the undulating plateau land to the east, which we found to be comparatively fertile and extensively cultivated to this very day. Here we entered a region dotted, as we were to discover, with Edomite and Nabataean sites. An hour's walk from 'Ain el-Qanah brought us to a small, stopped-up well, called Bîr Turkî, with two ruined sites on the rises on either side of it. Several hundred metres removed from it to the south-southwest, situated on a rise in the midst of cultivated fields,



Fig. 26. Rujm Bîr Turkî.

is Rujm Bîr Turkî (49). It is a completely ruined building, made of crudely cut flint blocks, with traces of an outer wall (Fig. 26). Among the ruins and in the fields surrounding them, we found a small quantity of plain and decorated Edomite EI I-II sherds and, in addition, several pieces of Nabataean ware and a few mediaeval Arabic sherds. Rujm Bîr Turkî guarded the fields surrounding it and may have helped also to protect the southwestern part of the Jebel esh-Shera'. About a hundred metres north-northeast of Bîr Turkî, on the side of a gradual slope rising above it, is a small, completely ruined Nabataean site, called Kh. Bîr Turkî (50). A considerable number of typical Nabataean sherds was found there. After the neighboring Edomite site had been abandoned, the Nabataeans, for once, instead of building over the previous site or simply reoccupying it, as was

their wont, established a new settlement of their own on the opposite side of the *bîr*. About a kilometre east of Rujm Bîr Turkî we came upon a small Nabataean site, with only a few dilapidated walls appearing above the ground. It is called Kh. Umm Ḥamât (51). It will soon completely disappear, because of the presence there of a semi-permanent Arab camp which makes use of the various building stones still obtainable in the few remaining walls of the Nabataean settlement. A number of worn Nabataean sherds were found.

About a kilometre and a half southeast of Kh. Umm Ḥamât on a rise surrounded by cultivated fields is a small ruined site called Kh. Umm el-Ḥoweitât (52). It is now a solid mass of flint blocks. There was originally a surrounding outer wall. By it was found a small quantity of Edomite EI I-II sherds, together with several Nabataean and a few mediaeval Arabic sherds. About half a kilometre to the northeast, also on a rise in the midst of cultivated fields, there is a similar *rujm* of somewhat larger size. It too seems to have been surrounded originally by a wall. It is called Kh. Ghanâm (53). It measures approximately 50 by 40 metres, being oriented south-southwest by north-northeast. A number of plain and decorated Edomite EI I-II sherds were found by it, as well as several Nabataean pieces and a small quantity of mediaeval Arabic sherds. These small Edomite places such as Kh. Ghanâm were primarily farm centers, in which the Edomite *fellaḥîn* lived and stored their crops; they could only secondarily have served as fortifications.

Less than a kilometre to the north-northeast of Kh. Ghanâm lie Kh. and 'Ain Ṭāsân (54), in the midst of cultivated fields.<sup>182</sup> Kh. Ṭāsân is a small, almost completely destroyed Nabataean site, with a few walls made of roughly dressed flint blocks, indicating the presence of former houses. 'Ain Ṭāsân has been dug out to a depth of about a metre and a half by the present inhabitants to provide a better flow of water, which is diverted then through a deeply dug ditch to small irrigation channels, radiating through a few neighboring patches of cultivation. A few Nabataean sherds were found. A kilometre below it to the southeast is another small, ruined Nabataean site called Kh. Umm ed-Diab (55). A few Nabataean and some mediaeval Arabic sherds were found there. Another kilometre farther south lie Kh. and 'Ain Khēyiyîṭ<sup>183</sup> (56). There are some indistinguishable ruins there, among which a few Nabataean sherds were found.

<sup>182</sup> ME II: 1, p. 279; II: 2, pp. 216, 231.

<sup>183</sup> ME II: 2, p. 231.

May 18. Less than a kilometre south-southwest of Kh. Umm el-Howeiţât (52) lies Kh. 'Aţiyeh (57), a small, completely ruined site, standing on a small rise in the midst of a cultivated area. It is oriented east-west, and measures 29 by 14.5 metres. It was once surrounded by a strong wall, built of great flint blocks, a few of which are still in place (Fig. 27). There are traces of fenced-in courtyards on the south side of the ruin. A number of Edomite EI I-II sherds were found. There were also several pieces of Nabataean ware and some mediaeval Arabic sherds.



Fig. 27. Remnant of outer wall at southeast corner of Kh. 'Aţiyeh.

Half a kilometre north-northwest of Kh. and 'Ain Ṭāsān (54) are Kh. and 'Ain el-'Alāweh (58). Kh. el-'Alāweh is a small, ruined, rectangular Nabataean tower, built of flint blocks and standing in a cultivated area. The small *wādī* north of it is terraced on either side with walls made of flint blocks. A few Nabataean sherds were found. A kilometre to the west-northwest is the completely ruined site Kh. Umm es-Seleileh (59), where some Nabataean and mediaeval Arabic sherds were found. A little more than a kilometre to the west-northwest lies the extensive ruined site of Kh. eṭ-Ṭaiyineh (60). It is located on a ridge in a cultivated region. On the east side of the site is a clearly marked section of Trajan's road. The earliest sherds are Edomite EI I-II. In addition there are some Nabataean, Roman, and mediaeval Arabic sherds. About a kilometre to the north we came to Kh. Umm Baradiyeh (61), built on a small rise next to Trajan's road. It is an exten-

sive site, with a number of house and wall rooms still remaining, made of well cut limestone blocks. No sherds were found, but it seems most probable that it is a Roman site. Close by is a sister site called Kh. Abū Ṣalūl (62). A kilometre to the northwest is a small ruined site called Kh. Ghānam (63), being originally one of the block-house type, built crudely of cut flint blocks. It is oriented north-south, and is 30 metres square. There are traces of an outer wall and adjacent courtyards. A small quantity of Edomite EI I-II sherds was found. In addition there were several Nabataean sherds and a small number of mediaeval Arabic sherds. A kilometre to the north, on the top of a hill commanding a view of Kh. Ghānam to the south of it, is a small, completely destroyed site, which to judge from the few sherds found there was occupied in the Nabataean and the mediaeval Arabic periods. It is called Kh. Salīm (64). Somewhat more than a kilometre west of Kh. Salīm lies Kh. Sweilīm (65), a small, rectangular, flint block structure, which is situated on a rise and commands the cultivated region round about it. It is oriented east-west, and measures 40 by 30 metres. A small quantity of Edomite EI I-II sherds was found. Kh. Sweilīm is near the western end of the cultivable ground in this particular area, because less than two kilometres beyond it begins the descent into the broken hills which overlook the 'Arabah.

About four kilometres to the northwest of Kh. Sweilīm we came to Bir Harābat ed-Dakhan (66), an almost completely stopped-up well. Beyond it to the northwest is a small ruined site, Kh. Harābat ed-Dakhan (67), whose few remaining walls are built of well cut limestone blocks. There were a few indistinguishable sherds, which may have been Roman, and also some mediaeval Arabic sherds. A section of the Roman road passes a few metres to the west of the site. About a kilometre to the north-northeast, on a rise overlooking the 'Arabah, is a small, ruined Roman post called Kh. Nabhān (68), guarding the Roman road. No sherds were found. A kilometre to the north-northeast we came upon Kh. and 'Ain Burqah (69). Situated on a rise at the northern end of the Jebel el-Burqah,<sup>184</sup> Kh. Burqah was a small Roman post on the Roman highway, whose course is clearly visible between Kh. Nabhān and Kh. Burqah. A few walls of Kh. Burqah are left, and there is a small *birkeh* immediately below it to the north. It commands a fine view of the 'Arabah. Below it to the west is the Wādī Burqah, which meets the Wādī Delāghah. A pass leads through the Wādī Delāghah into the 'Arabah.<sup>185</sup> On the east side of Kh. Burqah is the Wādī Umm Semaqah. No sherds were found to identify Kh. Burqah, but there is little reason to doubt that it is Roman.

<sup>184</sup> ME II: 1, p. 280.

<sup>185</sup> ME II: 1, p. 280; see below, p. 78.



*May 19.* A short distance east-northeast of Kh. Burqah is a large, completely destroyed Roman site called Kh. Naṣār (70). No sherds were found. Immediately below it is another small site, called Kh. Khmeis (71), which is really a part of the larger site. Here too there were no sherds. Another small, completely ruined site was situated about half a kilometre to the east, called Kh. Umm Semaqah (72). About three and a half kilometres to the east lies the fine, strong spring 'Ain el-Qrein, irrigating the gardens and fields in the shallow Wādī el-Qrein. On top of the hill overlooking the spring is the large, completely destroyed Kh. el-Qrein (73). There are several modern Arabic houses there. Quantities of sherds were found, which enabled us to fix the history of the site. There were numerous Edomite EI I-II sherds. There were also a number of Nabataean and some mediaeval Arabic sherds. At the southwest corner of the site are the ruins of some Nabataean buildings; they are gradually being completely demolished by the present inhabitants, who are using the ancient building stones for their houses. Immediately below Kh. el-Qrein to the north-northeast is a small, completely destroyed site, Rujm el-Qrein (74). There were no sherds there. It is in all probability a Roman station. A half destroyed, worn Roman milestone is to be seen there, marking the position of Trajan's road at this particular point.

Two and a half kilometres north of Kh. el-Qrein we came to Kh. and 'Ain Dôr (75). Kh. Dôr<sup>186</sup> is a very extensive, completely destroyed site on top of a hill overlooking the rich Wādī Dôr below it to the south, which is watered by the strongly flowing spring 'Ain Dôr. A modern Arabic settlement has sprung up by the side of Kh. Dôr and has in part been built over it, with large buildings constructed of building stones taken from the ruins. Large quantities of mediaeval Arabic sherds were found, and a few worn Nabataean and Roman sherds. On the south side of the Wādī Dôr, on top of a hill overlooking 'Ain Dôr, is Kh. Umm Râs (76).<sup>187</sup> It is a small, completely ruined Edomite and Nabataean site, commanding a rich agricultural region. There were some EI I-II sherds, and some Nabataean sherds, including two pieces with parallel lines of painting on the rims, resembling somewhat similarly decorated Edomite pottery, by which the Nabataean pottery may have been influenced.<sup>188</sup> About half a kilometre to the southwest, on the top of a high hill, lies Kh. Umm Ḥaṣḥas (77), one of the best preserved Edomite agricultural centers we found. It is a small, rectangular structure, oriented southwest by northeast, and measures 21 by 10.5 metres.

<sup>186</sup> ME II: 2, pp. 231-2.<sup>187</sup> ME II: 2, p. 231.<sup>188</sup> Cf. pl. 24: 17, 18.

Extending below the main structure to the southeast are several walled enclosures. One of them forms a walled rectangle larger than the main structure. Inside it are the foundation walls of another rectangular court or building, measuring 12.5 by 11 metres (see plan of Kh. Umm Ḥaṣḥas, Pl. 14). A large number of EI I-II sherds was found. There were also numerous Nabataean sherds. The main building and the adjacent large rectangular enclosure are probably of Edomite origin, while the smaller enclosure or building is probably Nabataean.

Two and a half kilometres southeast of Kh. Umm Ḥaṣḥas we came to Kh. Sherfân (78). A very short distance removed from it to the east is Kh. Ḥamdân (79). Kh. Sherfân is an extensive, almost completely destroyed site, with only a number of foundations remaining. Numerous Nabataean and Roman sherds were found. Kh. Ḥamdân, immediately to the east of it, is a very extensive ruin, with the foundation walls of numerous houses still in place. A considerable number of Nabataean sherds was found there. In both places there were numerous cisterns. Less than a kilometre southeast of Kh. Ḥamdân, we came to the ruins of Kh. Sweimreh<sup>189</sup> (80). It is completely destroyed and almost totally ploughed under. Ancient building blocks have been utilized for modern terraces and field boundaries. A small number of Edomite EI I-II sherds was found, however, and also several Nabataean pieces. 'Ain Sweimreh, below it to the east, irrigates a few fields at the head of the Wâdî Sweimreh.

*April 14.* Three kilometres north-northeast of Kh. Dôr lies Ṣadaqah (81), a large, ruined Roman city by the side of Trajan's road.<sup>190</sup> The ruins extend for the most part to the west and south of the strong spring, 'Ain Ṣadaqah, which irrigates a considerable area of cultivated ground.<sup>191</sup> There is a modern settlement at Ṣadaqah, with the result that the remaining house and wall foundations are being progressively leveled for the limestone and flint building blocks with which new structures are being erected. There were numerous Roman, Byzantine, and mediaeval Arabic sherds. Originally, however, Ṣadaqah was a Nabataean settlement, to judge from the considerable number of Nabataean sherds found there. About a kilometre east of Ṣadaqah, on top

<sup>189</sup> ME II: 2, p. 231.

<sup>190</sup> Trajan's road in southern Transjordan leads from 'Ammân through el-Kerak, Shôbek, Udhrûḥ, Ṣadaqah, and southward down the Neḡb esh-Shtâr, through Ḥismeh Valley and Wâdî Yitm to 'Aqabah: cf. ZDPV, XL, p. 142, pl. 1: PA I, p. 470; ANNUAL XIV, p. 81. Ṣadaqah = Zodikatha, AA II, pp. 24, 26, 28.

<sup>191</sup> PA I, p. 469.

of a high hill commanding a splendid view of almost the entire southern part of the *Jebel esh-Shera*, is *Rujm es-Şadaqah*<sup>102</sup> (82). It is a ruined watch-tower, about 21 metres square, which was evidently rebuilt a number of times during the course of its history. It is situated in the midst of an extensively cultivated area. Below it is the Turkish military road, which led from Ma'ân to Gharandel in the 'Arabah, and thence to Kuntillah. Only a few indistinguishable sherds were found by the *rujm* and on the sides of the hill below it. It probably belongs originally to the Nabataean-Roman periods. *Rujm es-Şadaqah* occupied a key position in the extensive system of Nabataean watch-towers and settlements, which extended within signalling distance of each other all the way down to the edge of the *Neqb esh-Shtâr*.<sup>103</sup>

The Turkish road was then followed west-southwest to Kh. *Mufleseh* (83), a large, completely ruined Nabataean site, partially occupied by a modern settlement. The high ground on which it was situated was strewn with Nabataean sherds. In the valley below it to the north we came upon Kh. *el-Megheîṭah* (84), a small site, with only a small number of foundation ruins still visible. There were evidently two stages in the history of the early occupation of the site, for some of the foundations were evidently built on substructures of different alignment and type. The pottery finds confirmed this observation. In addition to sherds of the Nabataean period, to which most of the visible foundation ruins belong, there were several Edomite EI I-II sherds. Several kilometres farther westward we came to 'Ain *Jeweizâ esh-Sherqîyeh*<sup>104</sup> (85), on the hillside above which were some small ruins. Among them, and by the spring, was a small number of Edomite and Nabataean sherds, in addition to some modern Arabic sherds. Continuing across the small *Wādî Jeweizâ* we came to another spring, 'Ain *Jeweizâ el-Gharbîyeh* (86), near which there are some traces of ancient ruins. There, too, some Edomite and Nabataean sherds were found. Some of the Edomite sites, such as these last two, like the Nabataean ones which replaced them, were open country villages. Many Nabataean sites were built directly over previous Edomite ones, as at Kh. *el-Megheîṭah*, and oftentimes undoubtedly effaced all vestiges of the former occupation. Similarly during the last few years modern Arab settlements have been springing up in southern Transjordan and are effectively removing all remains of those Nabataean sites, over which some of them have been built.

Proceeding southwestward we came to a small spring called 'Ain *Jenâb*

<sup>102</sup> PA I, pp. 468, fig. 544, 469; ME II: 2, p. 232.

<sup>103</sup> ME II: 2, p. 232.

<sup>104</sup> ME II: 1, p. 279.

esh-Shemsh (87), overlooking which on the top of the hill is a small ruined site, where a few Nabataean sherds were found. Several kilometres farther west we came to another small, ruined site on the top of the hill. It is called Kh. Ka'akah (88). We found a small number of EI I-II sherds there, together with several Nabataean sherds. From Kh. Ka'akah we descended to the beginning of the Wādī Delāghah, and followed its course to the strongly flowing 'Ain er-Reseis, immediately above which is Kh. er-Reseis (89), a small ruined site, where some Nabataean sherds were found. Continuing to the southwest, we came to Kh. and 'Ain Delāghah.<sup>195</sup> West of the spring, which irrigates a number of fields, there is an extensive ruined site, which, however, was completely devoid of sherds. There is a modern settlement nearby which uses the ruins as a convenient source for building materials. There is little doubt, however, in view of the numerous Nabataean sites east and northeast of Kh. Delāghah, and in view of the fact that the path to 'Ain Gharandel in the 'Arabah leads directly past it,<sup>196</sup> that Kh. Delāghah must originally have been a Nabataean site.

*April 15.* About four kilometres north-northeast of Kh. Ka'akah we came to Kh. Ismān (91), where a few Nabataean sherds were found. Below it is 'Ain Ismān, a small spring whose waters flowing first into a rudely constructed *birkeh* irrigate a few terraced fields, which are cultivated today. Proceeding to the northeast, ascending the gradual slope leading to the top of the esh-Shera' plateau, we passed three small springs, utilized to cultivate small irrigated areas, namely 'Ain ed-Dilbeh (92), 'Ain 'Aweineh (93), and 'Ain Batrah (94), before reaching Kh. and 'Ain er-Rājeif (95), where a modern Arabic settlement has sprung up.<sup>197</sup> Two small *birkehs* hold the waters of the strongly flowing spring. The extensive ruins are modern Arabic. The present owners of the site in digging additional irrigation ditches have uncovered the walls of a small mosque. No sherds earlier than modern Arabic could be found. About two kilometres farther on to the south-southwest on the top of the slope we came to Kh. Qabr Shâker (96). There were the ruins of several completely destroyed buildings there, among which a small number of Nabataean sherds was found.

*April 13.* Radiating from Eljî, the Arab village completely surrounded by gardens through which one passes down to the Bâb es-Sîq leading into Petra,<sup>198</sup> we examined a large number of sites situated in the environs of the

<sup>195</sup> ME II: 1, p. 279; II: 2, p. 228.

<sup>196</sup> ME II: 1, p. 280; see above, p. 39.

<sup>197</sup> ME II: 1, p. 282.

<sup>198</sup> ME II: 1, pp. 41. 42. 120. 150; PA I, pp. 429-30.

great Edomite-Nabataean center of Petra, which dwindled in importance after Trajan's reign. Leaving Eljî, we stopped at a point on the road just before reaching 'Ain Mûsâ and examined the terraced hillsides on either side of the road in an attempt to find a possible Edomite fortress guarding this important spring. We examined the extensive ruined site, Kh. Meheilleh<sup>199</sup> (97), on the north side of the road, but found only comparatively modern sherds there. Proceeding to the northwest and crossing the Seil Jelwâh,<sup>200</sup> we climbed the terraced hillside above it to Kh. Heidân (98), where several thick, ruined wall were visible. By them we found some modern Arabic sherds, but also some Nabataean sherds and a few Edomite EI I-II sherds. Later on, on the west side of the hill facing Petra, we were to find a huge Edomite site called Tawilân (130). Returning to the road, we drove several kilometres east-southeast along the Ma'ân road to a small site on the left side of the road called Kh. el-Beq'ah (99), where a few Nabataean sherds were found among the ruins. Six and a half kilometres to the southeast we stopped at Kh. el-Bastah (100), an extensive, completely ruined Nabataean site lying on opposite hillsides.<sup>201</sup> The small *wâdî* between the hills is cultivated, being irrigated by the waters of 'Ain el-Bastah, which rises in it a short distance west of the ruins. A considerable amount of Nabataean pottery was found. The hillsides show traces of elaborate terracing. There are ruins of numerous houses with paved floors on some of the terraces. Kh. el-Bastah was a large village, where the agricultural products of the district were collected before being shipped to Petra. Indeed from 'Ain Mûsâ on the entire country-side had been intensively cultivated in the Nabataean period, and in all probability in the Edomite period also, and the produce brought to Petra to satisfy the needs of the large population resident there and the numerous caravans that converged on Petra from all the corners of the compass. The fields enroute between Petra and Kh. el-Bastah are separated from one another by great walls and ramps, many of which must date back to Nabataean and even to Edomite times. They have been built during the centuries with the stones cleared from the fields while ploughing. Kh. el-Bastah was probably also occupied in the Roman, Byzantine, and mediaeval Arabic periods, although the only sherds other than Nabataean which could be distinguished were modern Arabic.

About four and a half kilometres southeast of Kh. el-Bastah are the extensive ruins of Kh. el-Ail (101) on the slopes of the hill overlooking the Wâdî

<sup>199</sup> ME II: 2, p. 11.

<sup>200</sup> ME II: 1, p. 43; II: 2, pp. 11-12.

<sup>201</sup> ME II: 1, p. 274; PA I, p. 467.

el-Ail and the 'Ain el-Ail, which rises at the point where the Wādī el-Ail and the Wādī el-Mabraq come together.<sup>202</sup> At the southwest corner of Kh. el-Ail are the remains of a strong tower and supporting wall built of well cut blocks of limestone. The southeast corner of the tower is still fairly intact.<sup>203</sup> It

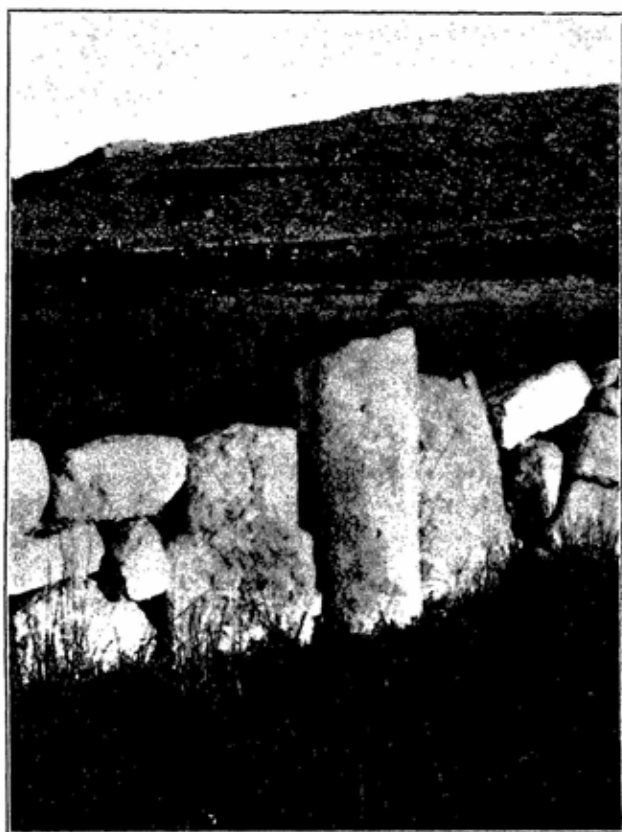


Fig. 28. Kh. el-Ail, looking northwest, showing Roman milestones in foreground.

would seem to be Roman in origin. The site was, however, originally Nabataean, as indicated by numerous Nabataean sherds which were found. In a crude field wall built between some cultivated patches near the spring, 'Ain el-Ail, there were two broken Roman milestones, one of them with a squared base (Fig. 28).

<sup>202</sup> ME II: 1, pp. 275-6; II: 2, p. 232.

<sup>203</sup> PA I, pp. 467-8.

Leaving the road and entering the fertile region south of Kh. el-Ail, we passed two excellent springs to the southeast and south of it, respectively, namely 'Ain el-'Asheirah<sup>204</sup> (102) and 'Ain Abū 'Aṭām<sup>205</sup> (103), both of them irrigating rich cultivated areas. There was a large Arabic *birkeh* by 'Ain Abū 'Aṭām, but no traces of earlier settlements could be found by either spring. Turning west-northwest, we proceeded to Kh. el-Fardakh<sup>206</sup> (104), which is about three and a half kilometres south-southwest of Kh. el-Baṣṭah. It is a very extensive, completely ruined site, situated on the slope of the hill to the south of Wādī el-Fardakh. A large area is intensively cultivated and crisscrossed with irrigation channels, through which the waters of the very strong 'Ain el-Fardakh flow. A large modern hamlet has sprung up next to and partly over the ruins, which are already so covered with modern debris that no sherds of the previous settlement or settlements on the site could be found. In a few years there will be hardly a trace of the ancient ruins left at all. In a similar manner, undoubtedly, many a Nabataean village completely effaced all remains of an earlier Edomite settlement. From el-Fardakh we proceeded southward to the Nabataean-Roman sites of Kh. and Rujm eṣ-Ṣadaqah (v. s., pp. 71-2).

May 8, 1935. About seventeen kilometres north-northeast of Ṣadaqah on the great Roman highway lies Kh. Udhrūḥ (105), a tremendous Roman ruin, which was also occupied in the Byzantine period and to a considerable extent in the subsequent periods.<sup>207</sup> In addition to Roman, Byzantine, and Arabic sherds, however, there were numerous Nabataean sherds strewn over the surface of the site, indicating that there was a considerable Nabataean settlement before the Roman city was built over it. About 500 metres east of Udhrūḥ and the very strong spring at its northeast corner, which irrigates a considerable area of cultivated ground, is a small hill. On the top of the hill, and on its north and south sides, are a few ruined foundations.<sup>208</sup> The sides of the hill are dotted with numerous modern Arabic graves. There were some Roman and Byzantine sherds, but most of the numerous sherds which were picked up were Nabataean. Among the ruins in Udhrūḥ proper were a number of building stones drafted with lines at a 45 degree angle, in a manner which seems to be characteristic of Nabataean masonry.

Two kilometres northwest of Udhrūḥ on the top of a high hill commanding

<sup>204</sup> PA I, p. 468.

<sup>205</sup> PA I, p. 468; II, p. 332; ME II: 2, pp. 232-3.

<sup>206</sup> ME II: 2, p. 232.

<sup>207</sup> PA I, pp. 431-67. Udhrūḥ = Adroa, AA II, pp. 24. 26. 28.

<sup>208</sup> ME II: 1, p. 431.

a view of that site, is a strong Nabataean watch-tower measuring 16 by 10 metres, oriented south by north. It is called Kh. eṭ-Ṭemei'ah (106). The south side of the tower is supported by two buttresses built against it. The hillside below the north wall is terraced, with remains of some strong terrace walls still visible. Near the southeast corner of the tower are the foundation remains of a small building. The entire complex seems originally to have been enclosed by an outer wall, of which now only the barest traces are left. Numerous Nabataean sherds were found. Below the hill, on the northeast side, is 'Ain eṭ-Ṭemei'ah, which irrigates a small area of cultivated ground. Two and a half kilometres farther north-northwest, on top of a high hill, are the featureless ruins of Kh. el-Jorbā (107), with 'Ain el-Jorbā on the south side of the small *wādī* below it.<sup>209</sup> The ruins are rather extensive and in their present state go back to the mediaeval and comparatively modern Arabic periods, as shown by the remains of pottery. Originally, however, the site was Nabataean. Numerous Nabataean sherds were found. The last three mentioned sites are by the modern road which leads between Ma'an and Shōbek, and are on the line of the section of the great Roman highway between Udhruh and Shōbek.

*May 15.* Two kilometres south-southwest of Eljī, on the west side of the Seil eṣ-Ṣadr, is the large, featureless ruined site of Kh. el-Meḥalleh<sup>210</sup> (108). A number of Nabataean and a small quantity of mediaeval Arabic sherds were found. A modern house has been erected among the ruins. Less than a kilometre northwest of it is the 'Ain Gheidān<sup>211</sup> (109), which once flowed into the now empty Arab *birkeh* next to it. Somewhat more than a kilometre southeast of Kh. el-Meḥalleh lies Kh. Sabḥiyeh (110), overlooking Wādī and 'Ain eṣ-Ṣadr.<sup>212</sup> It is a small ruined site, being little more than a large heap of stones, with nothing about it to help establish its identity. To the southeast of it is Kh. Ṣarāḥ (111), a small ruin, with two ruined towers, whose walls were built of very large limestone blocks, with small stones between some of the rows. There were some projecting foundation stones in place, similar to those in the Hippodrome at Jerash. The present structures represent a rebuilding, probably in the mediaeval Arabic period, of an earlier Byzantine or Roman settlement. No sherds were found. There is a large cistern inside the ruin-complex. Terraced fields lie around and below the site, which overlooks the Wādī Ṣuwākh to the southeast. Two Roman mile-stones were passed immediately beyond Kh. Ṣarāḥ. A kilometre and a half

<sup>209</sup> PA I, pp. 463-4; ME II: 2, p. 234.

<sup>210</sup> ME II: 2, p. 234.

<sup>211</sup> ME II: 2, p. 234.

<sup>212</sup> ME II: 2, p. 221.



south of it we came to the strong spring of 'Ain Ḥejīn (112), and three quarters of a kilometre south of it to Kh. Daḥāḥah <sup>213</sup> (113). Immediately across the Wādī Daḥāḥah to the east-northeast is another section of the ruined site called Kh. el-Minyeh (114). Kh. Daḥāḥah is a large, completely destroyed Nabataean ruin, built next to and over a small Edomite *tell* at the northeast end of the site. The *tell* is surrounded by a destroyed wall and by what appears to have been originally a revetment. It is otherwise completely covered with Nabataean superstructures and walls. A small quantity of clear Edomite EI I-II sherds was found on the mound and around it, in addition to numerous Nabataean sherds found throughout the entire site. At Kh. Minyeh, across the *wādī*, only Nabataean and Arabic sherds were found. There was a number of indistinguishable ruins there, in addition to several large caves which had once been utilized as cisterns. In the *wādī* bed between the two sites is 'Ain Daḥāḥah, some of whose waters are caught in a small modern *birkeh*. A kilometre to the north of Kh. Daḥāḥah is 'Ain el-Āliyah and a small, ruined modern Arabic *birkeh* (115). Three quarters of a kilometre northeast of it is Kh. Ṣuwākh (116). It is a small, completely destroyed Nabataean ruin, situated above 'Ain Ṣuwākh in the Wādī Ṣuwākh, which lies below it to the northwest. A number of Nabataean sherds was found among the ruins. Continuing south-southeast along the Wādī Ṣuwākh, which merges with the Wādī el-Far'ah, we came to 'Ain el-Far'ah (117). High above it to the southwest, on a promontory overlooking the junction of the Wādī el-Far'ah with the Wādī el-Bedd, are the ruins of Kh. el-Far'ah <sup>214</sup> (118). It is a small, almost completely destroyed site, with only a few vestiges of walls remaining, which surrounded the corner of the promontory. It commands an excellent view of the track which leads northwestward to Eljī and Petra. Most of the stones of the ancient site have been reused for the construction of rude goat and sheep pens. A considerable quantity of Edomite EI I-II sherds was found, as well as some Nabataean sherds. Kh. el-Far'ah is also called Kh. en-Nejeim, from the name of the small *wādī* which bounds the hill on the east side and joins the Wādī el-Far'ah before the latter, going northwest. is joined by the Wādī el-Bedd.<sup>215</sup> From Kh. el-Far'ah we returned to Eljī.

*May 9.* Proceeding south from Eljī, we followed an ancient track, marked by numerous sites, overlooking the Petra basin and the hills leading down into the 'Arabah. We followed this path as far south as Kh. Delāghah, whence, as we have seen, a track leads to 'Ain Gharandel in the 'Arabah.<sup>216</sup>

<sup>213</sup> ME II: 2, p. 234.

<sup>214</sup> ME II: 2, pp. 221. 234.

<sup>215</sup> Cf. ME II: 2, p. 221.

<sup>216</sup> See above, pp. 39, 69, n. 185.

These sites mark the western limit of the comparatively fertile and cultivated areas of that part of the *esh-Shera'*, which extends between Eljî and Kh. Delâghah. Beyond them to the west begin the increasingly bare hills which lead down to the 'Arabah, and which are marked only occasionally near the top slopes with patches of cultivation in protected *wādīs*. Three and a half kilometres south-southwest of Eljî, on the top of a hill overlooking Wādī Mūsā, we came to Kh. Brāk (119), from which a path leads down to Petra. It is a very small, ruined Nabataean site, situated among a group of terraced fields above and below it. Numerous Nabataean sherds were found among the ruins. Immediately below it is 'Ain Brāk, a strong spring whose waters were conducted during the Nabataean period to the city of Petra below.<sup>217</sup> A kilometre to the southwest are Kh. and 'Ain Emûn. Kh. Emûn (120) is a small, completely destroyed site, with numerous Nabataean and Arabic sherds lying among and outside the ruins. It was partially rebuilt in modern Arabic times. The waters of 'Ain Emûn flow into a rude Arabic *birkeh*, whence they flow into the irrigated, terraced fields below it.<sup>218</sup> From Kh. Brāk and Kh. Emûn the Jebel Hārûn is clearly visible to the west-northwest. About a kilometre to the southwest we came to Kh. and 'Ain Mu'allaq<sup>219</sup> (121). It is an extensive, ruined site, with quantities of mediaeval and modern Arabic pottery by it. 'Ain Mu'allaq rises above the site, irrigating a number of large terraced fields on the hillside below it. From this point the 'Arabah is clearly visible. Proceeding to the southwest we came to Kh. and 'Ain Debeil<sup>220</sup> (122). It is a small, featureless site below the spring, which irrigates a number of terraced fields. In the ruins a few Nabataean sherds were found and a large number of Arabic sherds. Most of these sites on the upper outskirts of Petra were occupied in the Nabataean period, when the terraced hillsides were verdant with grapevines and other plants whose yield was destined for consumption in the populous city of Petra. About two kilometres south of Kh. Debeil, we came to Kh. Bedeiweh(?) (123), situated above a few modern houses and a small, ruined Arab *birkeh*, into which the waters of 'Ain Bedeiweh once flowed. Numerous Nabataean and Arabic sherds were found among the featureless ruins. A short distance to the east-southeast is the modern village of eṭ-Taîyibeh, with the very strong spring 'Ain eṭ-Taîyibeh (124). There are about fifty houses there, used for the most part as grain bins. South of the village on a rise is a small featureless ruin called Kh. Debâṭ<sup>221</sup> (125). To judge from the sherds found there, it was originally

<sup>217</sup> ME II: 1, pp. 78. 98. 102.<sup>220</sup> ME II: 1, pp. 128. 283.<sup>218</sup> ME II: 1, p. 285.<sup>221</sup> ME II: 1, p. 282.<sup>219</sup> ME II: 1, p. 283.

Nabataean. Four and a half kilometres south-southeast are Kh. and 'Ain el-Ḥebeis<sup>222</sup> (126). Kh. el-Ḥebeis is a large, completely ruined site. Numerous Nabataean sherds were found, in addition to quantities of Arabic sherds. Returning to 'Ain eṭ-Ṭaiyibeh, we descended westward by a precipitous path into the Wādī el-Baṭḥah.<sup>223</sup> Near the northeast end of the *wādī* a large Nabataean cistern-cave was found, which still catches the rain water led to it through a channel cut in the wall of the almost perpendicular hillside rising above it (126a). Some Nabataean sherds were found by it. We were told by some Arab shepherds whom we met there that there were a number of similar cave-cisterns in the vicinity. To the southeast, on the flat top of a high hill overlooking the Wādī el-Baṭḥah, are the ruins of Kh. en-Nefei'āt (127), representing the remains of a small Arabic site. A few Arabic sherds were found there. Two kilometres to the west we came upon a small, completely featureless ruin called Kh. et-Tibn<sup>224</sup> (128). No sherds could be found.

*May 10.* Leaving Wādī el-Baṭḥah at 7.15 a. m., we arrived at 9.45 a. m. at Râs eṣ-Ṣabrah, overlooking Wādī eṣ-Ṣabrah, having passed on the way numerous veins of iron ore and collected many specimens of almost pure haematite. Descending into the Wādī eṣ-Ṣabrah, we found the entire way from Râs eṣ-Ṣabrah to eṣ-Ṣabrah itself (129) packed with specimens and veins of iron ore. About a kilometre west of the actual site of eṣ-Ṣabrah we found large deposits of highly cupriferous sandstone, particularly at a point where the Wādī eṣ-Ṣabrah widens out considerably for a short distance. The copper and iron ore deposits were the reason for the presence of the extensive ruined site of eṣ-Ṣabrah, a suburb of Petra. Mr. and Mrs. Horsfield had already in 1930<sup>225</sup> established the presence there of a tremendous copper mining and smelting site during the Nabataean period, although they had not located the source of the copper ore and of the iron ore which was used as a flux in smelting the copper. On the north side of the *wādī*, above 'Ain eṣ-Ṣabrah are the ruins of a number of large buildings constructed of blocks of local reddish sandstone. Some of the ruined buildings on the top of the *wādī* embankment on the north side of the *wādī* were evidently devoted to the smelting of copper on a large scale, to judge from the heaps of copper ore slag found by them. The largest of the copper smelting plants was at the western end of the group of buildings on the north side of the *wādī*. On the southeast side of the Wādī eṣ-Ṣabrah are the well preserved remains of a small theatre, with many of the

<sup>222</sup> ME II: 1, p. 282.<sup>223</sup> ME II: 1, p. 282.<sup>224</sup> ME II: 1, p. 282.<sup>225</sup> *The Geographical Journal*, Nov. 1930, pp. 376, 381, fig. 24.

seats still in place (Fig. 29). Built back of the top flight of steps is a strong wall made of well cut sandstone blocks, showing the lines cut at a 45 degree angle by the Nabataean masons. The wall served to create a *birkeh*, whose other sides were formed by the semi-circular space behind it in the face of the hill. The rain-water, pouring through a cleft in the hillside far above the theatre, plunged down the fissure in its side and was caught in the *birkeh*.<sup>226</sup> The *wādī* bed between the theatre and the smelting plants was originally paved with rectangular sandstone blocks, some of which are still visible. Very



Fig. 29. Theatre at es-Şabrah.

large quantities of Nabataean sherds of all types were found among the ruins. No Edomite sherds were found, although, it will be remembered, a few Nabataean sherds were found at each of the Edomite mining and smelting centers in the 'Arabah. The size and nature of the purely Nabataean mining center at es-Şabrah lead one to think that had the Nabataeans worked the copper mines in the 'Arabah after the Edomites, they would have left a much more indelible impression of their presence and activities than has been found. It is surprising, in view of known Edomite settlements in and near Petra, that no Edomite sherds were found at es-Şabrah. Possibly the large scale Nabataean operations there effectively removed all traces of former Edomite activities.

<sup>226</sup> It has been suggested that the water in the *birkeh* was used for a naumachy; cf. PA I, pp. 424-7; for a sketch plan of the entire site see p. 424, pl. XXI.

*May 11.* Leaving at 7.25 a. m. and retracing our steps part way through the Wādī eṣ-Ṣabrah, we arrived at Cook's camp at Petra at 11.00 a. m. The Edomite occupation of Petra during the Early Iron Age had been proven during a previous trip,<sup>227</sup> when Mrs. Horsfield, Mr. Head, and the writer undertook some soundings on the top of Umm el-Biyârah, the great acropolis<sup>228</sup> which dominates the Petra basin. Numerous sherds were found belonging to vessels of various kinds, most of them large storage jars, which can now be definitely classified as Edomite EI I-II ware.<sup>229</sup> The equation of Umm el-Biyârah with the biblical Sela', previously made, is now archaeologically substantiated.<sup>230</sup> In the Edomite period in all probability, the acropolis could be approached only by a very steep trail. During the Nabataean period a passageway with steps was hewn out along the precipitous side of the hill. It could be closed by a gate at the bottom, and two converging inclined runs near the top could be easily blocked. The acropolis can be scaled today only at the risk of one's limbs. Difficult of approach, and commanding a wonderful view over Petra, the position of Umm el-Biyârah corroborates the biblical passages which refer to Sela' as an inaccessible nest.<sup>231</sup> On the flat top of the acropolis are seven pear-shaped cisterns, filled with debris. The rainwater was led to them by channels cut in the rock surface. There are but a few ruined walls and tombs on the top of Umm el-Biyârah, which at the earliest go back to the Thamudic period. To that period may be attributed several crude rock drawings of camels and ibexes and three game boards, with two rows of nine, ten, and eleven rectangles, respectively. There is also a rock-drawn picture of a peacock, which may go back to the Byzantine period. The only distinguishable sherds recovered were those from the soundings identified as Edomite. Only a few indistinguishable sherds were found on the surface.

*May 14.* The Edomite occupation of Petra and its environs was indicated by the discovery of an extensive Edomite site, immediately outside of Petra, called Ṭawilân (130), northeast of Eljî. It is a completely ruined site, measuring approximately 245 by 100 metres, and is oriented north-northwest by south-southeast. Most of this area is surrounded by walls the outlines of which can be traced but which cannot with certainty be distinguished from

<sup>227</sup> See above, n. 118.

<sup>228</sup> *The Geographical Journal*, Nov. 1930, p. 374, fig. 5.

<sup>229</sup> Cf. pl. 26b.

<sup>230</sup> See above, p. 49, n. 118.

<sup>231</sup> Obadiah 1, 3. 4; Numbers 24, 21.

field or terrace walls. The main outline of a wall surrounding the entire area could, however, be made out. Inside of this area are two completely destroyed small towers, which may have marked the north and south ends of an originally smaller, rectangular area. This smaller area may also once have been walled in, to judge from some traces of a wall which are still visible (see plan of Ṭawilân, Pl. 15). Ṭawilân is situated on a shelf of land above the gardens of Eljî and below the high hill which rises above it, called Jebel Ḥeidân, on the northeast side of which, at Kh. Ḥeidân<sup>232</sup> (98) we had previously found some EI I-II pottery. To the west-southwest of Ṭawilân is visible on the north side of the Siq the Nabataean tomb called el-Khân.<sup>233</sup> It is impossible to say now whether or not Ṭawilân was a strongly fortified site, because it has been torn up and parts of it ploughed over so completely that the uninitiated might walk over it without even noticing that there had been a settlement there. It betrays its presence by very large masses of Edomite EI I-II sherds, with which its surface is covered. Small quantities of Nabataean and mediaeval Arabic sherds were also found. No other Edomite site which we examined yielded as numerous and as many varied types of Edomite pottery as did Ṭawilân. Located between 'Ain Mûsâ and 'Ain es-Sadr and the Siq, which it dominates, Ṭawilân was the largest Edomite center in the entire Petra area. The fortress of Umm el-Biyârah in Petra proper served the military needs of the Edomites in this region and dominated the tracks leading down into the 'Arabah. Situated in the heart of a fertile, well watered area, which was thickly settled in the Edomite period, and located at a meeting point of important trade-routes, Ṭawilân was one of the most important centers of the Edomite kingdom. It is not to be identified with Bozrah, as we once proposed,<sup>234</sup> but rather with Teimân, as has been suggested.<sup>235</sup> The passage in Amos 1, 12 referring to Bozrah and Teimân as being evidently in the north and south parts of Edom, respectively, suggests the relative positions of Buṣeirah, which is to be identified with Bozrah,<sup>236</sup> and Ṭawilân.

*May 12.* Leaving Eljî at 6.30 a. m. and going northward, we came to 'Ain el-Qraiyeḥ (131) at 7.15 a. m., where there was a small ruined post commanding a fine view of the Petra basin. No sherds were found. Continuing two kilometres north-northeast along the western edge of the esh-Shera' plateau

<sup>232</sup> See above, p. 74.

<sup>233</sup> ME II: 1, pp. 44-5.

<sup>234</sup> *Bulletin* 55, p. 14.

<sup>235</sup> PEFQS 1934, p. 186; Abel, *Géographie de la Palestine*, vol. I, pp. 284-5. Teimân is not to be identified with eth-Thuwâneḥ, as suggested by Musil, ME II: 1, pp. 32, 158, n. 3, because, although Edomite pottery has been found there, its position in the north part of Edom rules it out of consideration, cf. ANNUAL XIV, p. 77.

<sup>236</sup> See ANNUAL XIV, pp. 77-9; *Bulletin* 55, p. 14; see below, p. 98.

north of Eljî, we came to 'Ain Abū Hārûn (132), where there was another small, indistinguishable, ruined post, with no sherds present to help date it. Two kilometres farther to the north-northeast, we came to 'Ain and Kh. Debdebah<sup>237</sup> (133), a completely destroyed site, which was originally Naba-



Fig. 30. Bîr el-Beidâ.

taean to judge from a few Nabataean sherds found there. There is a small Arab *birkeh* there, and the terraced fields on the hillside below it are cultivated and marked by several olive and fig trees. A path leads from Kh. Debdebah northwest via the Arḍ el-Beidâ down to the Namalah pass, through which access is gained into the 'Arabah.<sup>238</sup> Descending the steep slope of

<sup>237</sup> ME II: 2, p. 235; PA I, pp. 409, 415.

<sup>238</sup> ME II: 2, pp. 218-20; PA I, pp. 414-5; see above, p. 35, n. 85.

Umm eṣ-Širr<sup>239</sup> to the Arḍ el-Beidā, we came to a whole complex of Nabataean cisterns and artificial catch-basins. In the Wādī Umm eṣ-Širr, in addition to a number of artfully constructed cisterns, a small altar place was found, with steps leading up to it on the east and west sides.<sup>240</sup> Among the

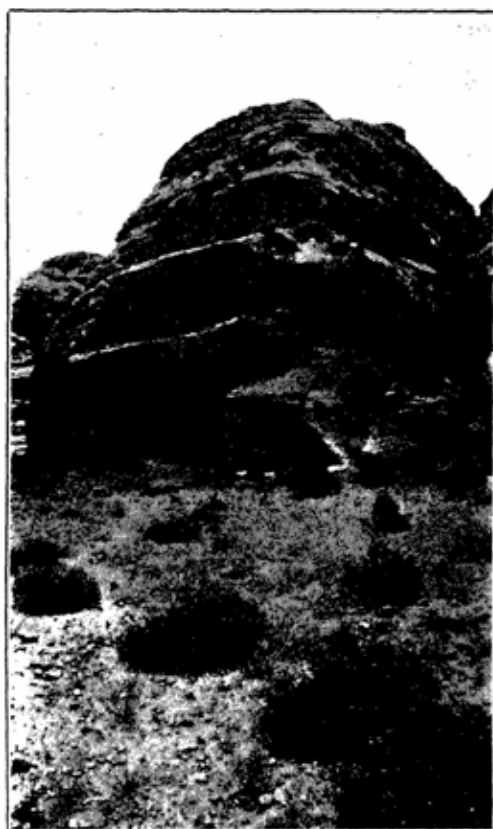


Fig. 31. Kh. Umm Qeṣeir.

most interesting reservoirs and cisterns hewn out among the gray sandstone hills on the east side of the Arḍ el-Beidā, opposite el-Bâred, was one known as Bîr Beidā (134). It is a very large cistern at the bottom of a high, perpendicularly faced hill (Fig. 30). A small hill near it, called Kh. Umm Qeṣeir (135), had been almost completely utilized to provide cisterns and burial chambers (Fig. 31). Some of the cisterns still contained water from the

<sup>239</sup> ME II: 2, p. 235.

<sup>240</sup> ME II: 2, p. 220.



spring rains. Much of the area of the Arḍ el-Beidā was terraced and cultivated in the Nabataean period and is still partly cultivated at the present time. On the west side of the Arḍ el-Beidā a narrow ravine cuts through the hills, the eastern entrance to which was once guarded by a gate. It is the Sîq



Fig. 32. Nabataean tomb at el-Bâred, looking north.

el-Bâred (136), in a way a miniature of the Sîq which leads into Petra. After a short distance the Sîq el-Bâred, which is oriented west-northwest by east-southeast, widens out, and on either side of the cool, grass-covered street is a succession of temples, tombs, and cisterns (Fig. 32, 33), carved out of the hill-sides. Flights of stairs, most of them broken off midway, lead to dwellings, tombs, and reservoirs higher up. Narrowing abruptly at its western end, so that the opposite walls of the Sîq el-Bâred almost touch, a flight of steps leads

up through the opening between the walls to the broken plateau land, which extends for some distance to the west before the descent into the 'Arabah begins.<sup>241</sup> El-Bâred was an important suburb of Petra, the architecture of its buildings being exactly similar to that of the Nabataean buildings in Petra. Numerous Nabataean sherds were found in the Sîq el-Bâred. We missed visiting Kh. el-Qarn, a short distance north-northeast of el-Bâred. It is a fortress guarding the Namalah pass.<sup>242</sup> About two kilometres east of



Fig. 33. Nabataean tomb at el-Bâred, looking south.

el-Bâred we came to Kh. en-Neq'ah<sup>243</sup> (137), a small, completely destroyed ruin, out of which nothing could be made. No sherds were found by it.

Proceeding to the north-northeast along the wooded hills extending just below the western edge of the esh-Shera' plateau, we came to Kh. and Bîr Hezeir<sup>244</sup> (138), overlooking the 'Arabah. Kh. Hezeir is a small, completely destroyed site, among whose foundation ruins a number of oak trees are growing. No sherds were found. A kilometre to the north, in a wooded area, was a pile of ruins called Kh. el-Hisheh<sup>245</sup> (139). There were no sherds. Four and a half kilometres to the northeast on the top of the esh-Shera' plateau, in a rolling, cultivated area, are Kh. and 'Ain 'Eraq el-Janûbîyeh<sup>246</sup>

<sup>241</sup> Cf. PA I, p. 408, for plan of el-Bâred.

<sup>242</sup> ME II: 2, pp. 219-20.

<sup>243</sup> ME II: 2, p. 220.

<sup>244</sup> ME II: 2, pp. 220, 236.

<sup>245</sup> ME II: 1, pp. 290, 329.

(140). It is a completely ruined site on top of a small hill, and has been occupied in comparatively modern times. In addition, however, to modern Arabic sherds, there were quantities of Edomite EI I-II sherds and some Nabataean sherds. The site was originally walled in, but it has been so torn up and ploughed over, in part, that it was impossible to trace the outline of the walls. To the northwest the pointed peaks of the Jebel Abū Sakākīn are visible, and beyond them a section of the 'Arabah can be seen. About half a kilometre to the north is the strong spring, 'Ain el-'Eraq. Half a kilometre beyond it on a rise to the north is another ruined site, called Kh. 'Eraq esh-Shemālfīyeh (141). It is an extensive, completely destroyed site. Large quantities of Edomite sherds were found there and also some Nabataean sherds. The site seems once to have been enclosed with a wall. It can no longer be traced, because of the ploughing which has been carried on over the site. Several hundred metres below 'Ain el-'Eraq are the remains of a well-built tower, about six metres square, made of well cut limestone blocks. Some Nabataean sherds were found by it.

May 13. Somewhat more than a kilometre to the north are Kh. and 'Ain Jeneineh <sup>246</sup> (142), situated in a small valley. 'Ain Jeneineh is a strong spring, irrigating a small number of cultivated fields. A small modern settlement has sprung up next to and partly over the ruins of the *khirbeh*, which is so completely destroyed, in addition to being thickly covered with modern debris, that nothing could be determined about the time of its origin. A kilometre southeast of Kh. Jeneineh, having climbed nearly to the top of the plateau above it, we came to 'Ain el-Ḥewāleh (143) and on top of a high hill above it to Kh. el-Ḥewāleh (144). The latter is a large, completely destroyed Nabataean site. Large quantities of Nabataean sherds were found. About three and a half kilometres to the southeast is Kh. el-Meqdes <sup>247</sup> (145), a large, completely ruined site. Numerous Edomite EI I-II sherds were found and also some Nabataean sherds. Numerous large *butm* trees were in the vicinity, but more numerous were the stumps of such trees, cut down by the Turks during the World War. There are large sections between Petra and Shōbek and north of Shōbek whose wooded areas were similarly denuded during the World War. At that time the Turks built a special railway from 'Aneizeh on the Ḥejāz railway line to Shōbek, for the single purpose of hauling out the timber cut for them along the western edge and top slopes of the esh-Shera' plateau. In the Early Iron Age, when the copper mines

<sup>246</sup> ME II: 1, p. 290.

<sup>247</sup> ME II: 2, p. 236.

in the 'Arabah and that of Umm el-'Amad below Shôbek were intensively worked and the ore smelted, the necessary fuel was, in all probability, brought to the smelting plants from these heavily wooded areas on the western side of the Jebel esh-Shera'. Much of the wood was probably burned to charcoal before being transported to the mining centers by steadily circulating caravans of camels and donkeys, which also brought other supplies and returned laden with the pure ore. We have observed the analogous practice of the Egyptian caravans supplying the needs of the copper and turquoise mines in Sinai and returning laden with the gems and copper obtained.<sup>248</sup>

A kilometre and a half south of Kh. el-Meqdes we came to Kh. el-Khôr (146), a small Nabataean ruin where a small number of Nabataean sherds was found. From a point just before reaching Kh. el-Meqdes, we had been following the line of a Turkish road built southward into the timber country to haul lumber to Shôbek, whence it could be shipped by train on the specially constructed line going to 'Aneizeh. The Turkish road was built partly over the Roman one, which led northward from Petra to 'Ain Nejel below Shôbek.<sup>249</sup> On either side of the road in the vicinity of Kh. el-Khôr were stumps of great *butm* trees. We then proceeded southward past Bir el-Dabârah (147), a stopped up well.<sup>250</sup> Ascending to and passing the Râs el-Hewârî<sup>251</sup> (148), we examined the small, indistinguishable ruins of Kh. el-Mikhwan (149) and Kh. eş-Şefâ (150). We stopped next at the small spring 'Ain el-Ḥai<sup>252</sup> (151), proceeding then to Ṭawilân (130) and returning thence to Eljî.

May 21. Radiating from Shôbek, a large number of sites was examined. The slopes of the hill on which Shôbek is situated were examined for sherds, but we found none earlier than Nabataean. There is reason to believe, however, that this fine site, with its excellent water supply, must have been occupied in the Early Iron Age, if not also in the early Bronze Age contemporary with the Bronze Age occupation of Feinân. Two kilometres northwest of Shôbek we came to 'Ain Şihân<sup>253</sup> (152), a strong spring, close to which was a small, indistinguishable ruin. Half an hour's walk to the northwest through a rich agricultural region brought us to the edge of the plateau overlooking the 'Arabah, with the black range of Jebel Ḥamr Ifdân in view. Commencing the descent to the northwest in the direction of Feinân, we passed first through a wooded and grass covered area, typical of the top of

<sup>248</sup> See above, pp. 25. 34.

<sup>249</sup> ANNUAL XIV, p. 76.

<sup>250</sup> ME II: 2, p. 236.

<sup>251</sup> We missed Tell and 'Ain el-Hewârî, cf. ME II: 1, p. 38.

<sup>252</sup> ME II: 1, p. 43.

<sup>253</sup> ME II: 1, p. 327.

the western slopes of the *Jebel esh-Shera*, which led down into the foothills overlooking the 'Arabah. Here and there a few patches of cultivation were to be seen, near the last of which on the way down we came to 'Ain Sa'id (153). There were no ruins by it. Entering the *Wādī Umm el-'Amad* the descent became so precipitous that it became necessary to leave the donkey and our packs behind and clamber down the right side of the *wādī*, which, we were told, runs into the 'Arabah immediately south of Feinân. After about three hours walk west-northwest of Shôbek we arrived at Umm el-'Amad (154),



Fig. 34. The entrance to Umm el-'Amad, looking north.

below which, approximately eight kilometres to the north-northwest, is Feinân. We had heard about Umm el-'Amad from the Arabs. Its name, "The Mother of Pillars," suggested that it might possibly be a copper mine, as has been pointed out.<sup>254</sup> We had searched for it long and been led on many false trails before finally finding a guide in Shôbek who actually knew where it was located. Umm el-'Amad<sup>255</sup> turned out to be a large copper mine cut into the face of a sandstone cliff on the right side of the *wādī*. There are five large pillars at the entrance of the mine (Fig. 34), which extends into the face of the hill for about thirty-five metres. It is about nineteen metres wide at its widest point, and there are the beginnings of a number of galleries at

<sup>254</sup> Cf. *The Geographical Journal*, Nov. 1930, p. 372.

<sup>255</sup> It is known also as Umm el-'Amāmīd. Cf. *The Geographical Journal*, Nov. 1930, p. 372.

the far end of the mine which were not followed up by the early miners. The roof inside the mine is supported by numerous free standing pillars similar to those at the entrance. They average about two and a half metres in height and about a metre in width. It is necessary to crawl into the



Fig. 35. Pillar at entrance of Umm el-'Amad, showing veins and nodules of copper ore.

mine at the entrance, where the debris of centuries is slowly mounting towards the roof. Inside, however, it is possible to stand upright. The pick lines left by the tools of the miners are still visible on the walls and roof and on the pillars, all of which are black with smoke. Generations have camped in Umm el-'Amad, since it was abandoned as a mine, and they have left piles of debris behind them, under which sherds may be buried. Veins and nodules of ore are visible in the walls and pillars of the mine (Fig. 35). The

cupriferous sandstone of Umm el-'Amad, which is also speckled with iron oxide, was probably transported to Feinân to be crushed and smelted because of the excellent supply of water there. There were also quantities of ferruginous sandstone in the vicinity. The extensive slag heaps at Feinân become explicable in view of the importation of ore from Umm el-'Amad, and perhaps also from surface mines near it. Inasmuch as no sherds were found at Umm el-'Amad, it is impossible to say definitely just when the mine was worked, although one may assume that it was certainly worked during the Early Iron Age, when most of the mining and smelting activities in the 'Arabah took place. Retracing our steps to a point about a kilometre and a half west of 'Ain Sa'îd (153), we came to a small, indistinguishable ruined site called Kh. Tûr eṭ-Ṭawârah (155), built on a small promontory overlooking the track leading to Umm el-'Amad. No sherds were found.

*May 22.* Two and a half kilometres south of Shôbek are the indistinguishable ruins of Kh. ez-Zebeirîyeh<sup>256</sup> (156), where some Roman and Arabic sherds were found. Two and a half kilometres to the south-southeast of it we came to a small, almost completely ruined site called Kh. Nuṣrânîyeh (157). A few walls, dry built of crude limestone blocks, remain, probably modern Arabic in origin. They were, however, evidently built over a former Nabataean site, to judge from a few Nabataean sherds found there. Two kilometres farther to the west-southwest are two small ruins, each known as Kh. Abû Hārûn, the one (158) being a completely destroyed site, with only a few building blocks left, the other (159) consisting of a much ruined flint block building, with parts of its walls still standing. Both sections were originally Nabataean, to judge from the Nabataean sherds found by them. About five kilometres to the southwest we came to Kh. Ḥedâd (160). It is a large, ruined site, with several modern houses built among the ruins. Below it to the west is Bîr Ḥedâd. In addition to comparatively modern Arabic sherds, some Nabataean sherds were found.<sup>257</sup> Two kilometres to the north is a small, completely ruined Nabataean site called Kh. Bîr Melâḥîn (161), with a deep well, Bîr Melâḥîn, below it to the north. A small quantity of Nabataean sherds was found, in addition to modern Arabic sherds. Two kilometres north-northwest of it we came to Kh. Ḥeleileh (162), built on top of a small hill. It was extensively occupied in the mediaeval Arabic period but was originally Nabataean to judge from the sherds found there. On the very top of the hill, in the center of the ruins, are the remains of an Arabic building whose walls are built of limestone blocks, with small stones

<sup>256</sup> ME II: 2, p. 237.

<sup>257</sup> ME II: 2, p. 236.

between the rows. We then proceeded west-northwest until we reached the western edge of the top of the plateau, with the Jebel Abū Sakākin and the 'Arabah visible below.<sup>258</sup> Overlooking the Seil el-Feiḍ was clustered a group of small sites. At a point about two kilometres northwest of Kh. and 'Ain Jeneineh (142), on the top of the ridge, is a small, completely ruined site called Kh. el-Weibdeh (163). A small number of Edomite EI I-II sherds was found there, as well as one fine piece of rouletted sigillata and several pieces of Arabic ware. A paved floor indicated where a Roman or Nabataean building had stood. Below it, on the slope of the hill descending to the north, are the remains of another small Edomite site commanding the strong spring, 'Ain Shemmākh, immediately below it to the west; it is called Kh. Ishrā (164). On the north side of the *wādī*, near the west end of the cultivated area, is a small Arabic ruin called Kh. Jefālleh (165). Kh. Shemmākh<sup>259</sup> (166), above 'Ain Shemmākh, is partly occupied today, a few hovels having been built over the ruins, among which were found fragments of Nabataean, mediaeval and modern Arabic pottery. One piece of Edomite EI I ware was found by the spring. Above Kh. Shemmākh, also on the north side of the *wādī*, on the very top of the hill, is an almost completely ruined Edomite fortress, which dominated the ancient settlements in the *wādī* and on the slopes below it. There remains now only a mass of fallen flint blocks. The fortress stood on a ridge connected only by a tongue of land to the hill to the west, its other sides rising sheer and inaccessible. It is called Kh. Uṣdūr el-Leweimeh (?) (167). There were some Edomite EI I-II sherds among and below the ruins. Two kilometres southwest of Shōbek we came to Kh. Sarāb (168), an extensive ruin west of 'Ain Sarāb in a cultivated area. It overlooks Wādī Sarāb and is a Nabataean-Roman site, to judge from the sherds found. Continuing northward, we came to Kh. el-Qleib (169), a small, ruined Nabataean site overlooking 'Ain Nejel<sup>260</sup> to the south of it. A kilometre to the northeast is an extensive, completely ruined Nabataean-Roman site called Kh. 'Azūm (170), which also commands a view of 'Ain Nejel.<sup>261</sup>

*May 23.* Three kilometres north-northeast of Kh. Uṣdūr el-Leweimeh (167) is Kh. el-Gharqah<sup>262</sup> (171), situated on the western edge of the esh-Shera' plateau on the top of a ridge commanding a view of the Jebel Abū Sakākin and the 'Arabah. It is a walled site, whose ruins have been

<sup>258</sup> ME II: 2, p. 216.

<sup>261</sup> ME II: 2, p. 236.

<sup>259</sup> ME II: 1, pp. 290, 328.

<sup>262</sup> ME II: 1, p. 328.

<sup>260</sup> ANNUAL XIV, p. 76.



transformed into goat and sheep pens. A number of Nabataean and mediaeval Arabic sherds were found. Three kilometres to the east of it on a small rise is an extensive, completely ruined Nabataean site called Kh. Mugheirah (172). Numerous Nabataean sherds were found. Immediately below it to the west is 'Ain Mugheirah. About three kilometres to the northeast of Kh. el-Gharqah we came to Kh. Umm Lôzah <sup>263</sup> (173), a small, indistinguishable ruin, almost completely ploughed over. No sherds were found. A kilometre and a half to the north, on the edge of the plateau overlooking the 'Arabah, is a small completely destroyed site called Kh. Beweitrah (174), where only comparatively modern Arabic sherds were found.

Three kilometres east-northeast of Shôbek we came to 'Ain el-Habis (174 a), by which there is a small modern settlement. We then moved on about a kilometre and a half north-northeast to Kh. el-Bustân (175), overlooking the very strong spring 'Ain Jerab. It is a small, originally Nabataean site, to judge from the sherds. A number of excellent millstones were seen there. Proceeding to the north and then turning to the west, we ascended a high, steep hill, which had once been carefully terraced and on which a number of ancient small towers and houses were found. On the hillside, a kilometre and a half to the west-northwest of Kh. el-Bustân, was a much ruined small limestone tower called Rujm el-'Arâqîb (176), overlooking the approaches to Kh. el-Bustân. No sherds were found. Half a kilometre farther up on the hillside was another small ruined tower, by which a number of Nabataean sherds was found. It is called Qaşr Abû el-Başal (177). A short distance beyond it to the west is another small *rujm*, overlooking a ploughed terrace. It is called Rujm el-'Amârîyeh (178). There were no sherds by it. On top of the plateau we came to Kh. eṭ-Ṭawârah (179), a completely ruined site, by which some Nabataean sherds were found. There is a modern Arabic village immediately above it and a strong spring, 'Ain ez-Zawatîn, immediately south-southeast of the village. Proceeding then about two kilometres to the northwest to the edge of the plateau overlooking the 'Arabah, we came to a large, almost completely ruined tower made of large limestone blocks. It is called Kh. el-Meqeir (180) and is situated on the highest point in the vicinity, commanding an excellent view in all directions. No distinguishable sherds were found.

*May 24.* About eight kilometres east-northeast of Shôbek, on the left side of the road leading to eṭ-Ṭafileh, we came to Kh. es-Semeirâ <sup>264</sup> (181). It is an extensive, almost completely ruined site, with only a few walls built

<sup>263</sup> ME II: 1, p. 328.

<sup>264</sup> ME II: 1, p. 324; II: 2, p. 237.

of basalt blocks remaining. A number of Nabataean, Byzantine, and mediaeval Arabic sherds were found. About five kilometres farther to the north, situated on a small rise on the right side of the road, was another large, ruined site, whose buildings were originally made of basalt blocks. It is called Kh. Ḥemâṭah (182). A small quantity of Nabataean and mediaeval Arabic sherds was found.

*May 25.* About five kilometres east of Kh. es-Semeirā (181), crossing the Arḍ Ifjeij, which was completely uncultivated, we came to a high, isolated hill which thrust itself above the plain. It is called eṭ-Ṭawīl Ifjeij.<sup>265</sup> Built on its very top, at the northeastern corner of the hill, is Kh. Ṭawīl Ifjeij (183), a ruined tower, 15.50 metres square, made of rudely cut basalt blocks. A number of modern graves have been dug into the debris on top of the tower. There are three cave-cisterns on the west side of the tower, which in their present form probably go back to the Nabataean period. They may originally have been used in the other main period of occupation, namely, during the Early Iron Age (see plan of Kh. Ṭawīl Ifjeij, Pl. 16). Large quantities of Edomite EI I-II sherds were found, in addition to a small number of Nabataean sherds and a few mediaeval Arabic sherds. The main occupation of the site, to judge from the pottery finds, was unquestionably during the Edomite period, when Kh. Ṭawīl Ifjeij served as a border fortress on the eastern boundary of the Edomite kingdom. It was like a number of similar Edomite fortresses which we were to find. They were all situated on the highest hills in the arid, uncultivated area between the Desert and the Sown, within view of one another. Indeed, they were so well placed that the members of the modern Cadastral Survey, which is being made by the Transjordan Government today, have built cairns on the tops of these border fortresses to serve as major triangulation points (Fig 36). This line of border fortresses runs a few kilometres west of the north-south line on which Da'jānīyeh<sup>266</sup> is located. Kh. Ṭawīl Ifjeij commands a clear view to and beyond Da'jānīyeh, situated to the east-southeast of it. Below the precipitous east side of the hill, which the fortress almost directly overlooks, the Wādī Aseimīr runs southeast into the Wādī Da'jānīyeh. To the north-west is visible Rujm Rās el-Ḥālā (v. i.). The Nabataeans evidently occupied the fortress after the Edomites, placing apparently a much smaller garrison there than in the preceding period. This and the other Edomite border fortresses were incorporated into their own enlarged system of border defences

<sup>265</sup> ME II: 2, p. 239.

<sup>266</sup> ANNUAL XIV, p. 76.

by the Nabataeans, whose border defences were all within signalling distance of one another.<sup>267</sup>

About thirteen kilometres northwest of Kh. Ṭawīl Ifjeij we examined another Edomite border fortress, Rujm Râs el-Ḥâlâ (184). It is about forty-five minutes walk west of Kh. el-'Alimeh.<sup>268</sup> Situated on top of the highest hill in the vicinity, it commands a view for miles around it. On top of it, too, the engineers of the Cadastral Survey have erected a cairn to serve as a major triangulation point. It is a ruined, rectangular structure, built of

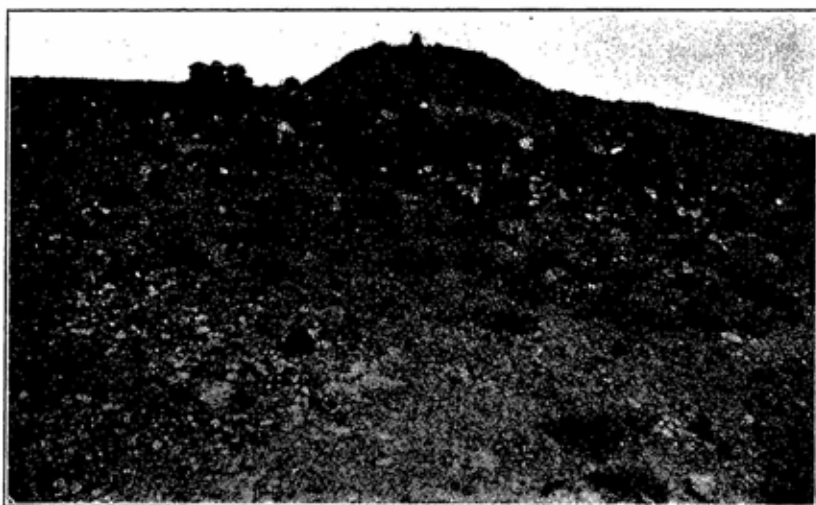


Fig. 36. Kh. Ṭawīl Ifjeij.

rudely cut flint blocks and measuring 30 by 15 metres. It is oriented north-northeast by south-southwest. Around it were found large numbers of Edomite EI I-II sherds. Built next to it and partly over it are the ruins of a subsequent Nabataean settlement. To the Nabataean period, in all probability, belong the ruined foundation walls of buildings north and east of it. The rough walls, forming enclosures on the west side, seem to be comparatively modern (see plan of Rujm Râs el-Ḥâlâ, Pl. 17).

*May 26.* About eleven kilometres east of Rujm Râs el-Ḥâlâ is Rujm Ḥâlâ el-Qarâneh (185), another Edomite border fortress. It is visible from the modern road which leads between eṭ-Ṭaffileh and Jurf ed-Derāwîsh. From a point on this road about ten kilometres northwest of Jurf ed-Derāwîsh a

<sup>267</sup> ME II: 2, p. 232; ANNUAL XIV, p. 72.

<sup>268</sup> ANNUAL XIV, p. 77.

twenty-five minute walk brought us to the *rujm*. Situated on the northeastern corner of a high, isolated hill, it commands an excellent view over the arid plain to the east of it, whence invasions into the rich Edomite territory might possibly come. Built of basalt and lava blocks, the ruined fortress, whose walls can still be traced, measures 15.50 metres square, like Kh. Tawil Ifjeij (see plan of Rujm Hâlâ el-Qarâneh, Pl. 18). On it, too, is a modern survey cairn. Beyond it to the south-southwest on top of a high hill may be seen a similar *rujm* called Kh. el-Jeheirah, which we were unable to visit. It is on a line with Kh. Tawil Ifjeij, still farther to the southwest. On the slopes below Rujm Hâlâ el-Qarâneh we found numerous Edomite EI I-II sherds, and also some Nabataean sherds. Below the fortress to the west was a comparatively modern cistern and another one southwest of it which may be Nabataean in origin. It may be that even water had to be brought to the garrisons of the Edomite fortresses.

May 6. North of the Wâdî Dâna we examined a number of sites centering around Buṣeirah. During the preceding year we had examined Buṣeirah, finding quantities of Nabataean as well as a number of Byzantine and mediaeval Arabic sherds on the top and slopes of the great, almost completely isolated hill on which it is situated.<sup>269</sup> A few sherds found there at the time, however, were similar to others picked up at Umm el-Biyârah, Imṭât, er-Ruweihah, and eth-Thuwâneh, which did not lend themselves to immediate classification although they were examined also by Père H. Vincent and Professors W. F. Albright and C. S. Fisher. As a result of the determination of the nature of Edomite pottery through the subsequent discovery of a large number of Edomite sites it became possible to fix the sherds found at Buṣeirah and the other sites mentioned as Edomite, belonging to EI I-II.<sup>270</sup> An exhaustive examination of Buṣeirah again during the 1934 campaign resulted in the finding of a small number of other Edomite EI I-II sherds, in addition to the types already mentioned, proving beyond all doubt that Buṣeirah was occupied during the Early Iron Age. The popular identification of Buṣeirah with Bozrah is therefore undoubtedly correct.<sup>271</sup> The fact that so few sherds belonging to the Early Iron Age were found is to be ascribed to the great quantities of debris of subsequent settlements which cover the top and steep slopes of the Buṣeirah hill. Buṣeirah-Bozrah guarded the Edomite track leading along the western edge of the Jebel esh-Shera', and controlled the approaches from the east to the copper mines in the 'Arabah

<sup>269</sup> ANNUAL XIV, pp. 78-9.

<sup>270</sup> ANNUAL XIV, pp. 69, 77.

<sup>271</sup> See above, p. 83 and n. 235.

centering about Kh. en-Nahâs. It was evidently the strongest Edomite city in northern Edom, its natural position making it practically impregnable.<sup>272</sup>

About four kilometres south-southeast of Buṣeirah is Kh. Nuṣrānīyeh<sup>273</sup> (186), with 'Ain Nuṣrānīyeh below it to the west. This is a large, ruined site, whose remaining walls are built of well cut limestone blocks. Quantities of Byzantine and mediaeval Arabic sherds were found. One fallen lintel was decorated with three Byzantine crosses carved on it, each of them enclosed in a circle. Inside the ruins a large, almost completely intact millstone was found. There were numerous cisterns scattered among the ruins. Three kilometres to the southwest we came to Kh. and 'Ain Sarâb (187). Kh. Sarâb is a small, completely ruined site, with building stones similar to those of Kh. Nuṣrānīyeh. No sherds were found. A number of oak trees were growing among the ruins.

May 7. Proceeding to the west-northwest we came to Kh. Maqṭah<sup>274</sup> (188) on the western edge of the plateau, below which in the 'Arabah the regions of Kh. en-Nahâs and Kh. Gheweibeh are visible. It is a small, indistinguishable ruin. No determinable sherds were found. Two and a half kilometres to the north we came to a small, completely destroyed site called Kh. Jeleil (189), overlooking the Neqb Jâriyeh and the Neqb Gheweibeh.<sup>275</sup> There were no sherds, but a few scraps of copper were found. Kh. Jeleil may have been an Edomite post along the tracks leading from the copper mines in the 'Arabah, below the Neqb Jâriyeh and the Neqb Gheweibeh, to Bozrah. Kh. Maqṭah may originally have been a similar post. It is also possible that from these sites in a wooded area charcoal was supplied to the mines for the smelting operations. Two kilometres farther north we came to a small, ruined Arabic structure, measuring about 15 by 7 metres and oriented north-northeast by south-southwest. It is made of rudely cut limestone blocks, with small stones between the rows. No sherds were found. It is known as el-Qaṣr, or Kh. el-Qaṣr<sup>276</sup> (190). Three and a half kilometres to the east we came to Kh. el-Kôlah<sup>277</sup> (191), situated on the top of a high, steep hill and commanding a view over the 'Arabah to the west. Buṣeirah is below it to the east. There was a group of abandoned Arabic houses on top of the hill. No sherds were

<sup>272</sup> For details with regard to the position of Buṣeirah see ANNUAL XIV, p. 78.

<sup>273</sup> ME II: 1, p. 323.

<sup>274</sup> ME II: 1, p. 299.

<sup>275</sup> ME II: 1, p. 299.

<sup>276</sup> It is perhaps the site which was known to Musil, ME II: 1, pp. 299, 322, as el-'Ebr, although repeated questioning of local Arabs invariably elicited the description of the 'Ain el-'Ebr southeast of Buṣeirah, cf. ANNUAL XIV, p. 79.

<sup>277</sup> ME II: 1, pp. 321-2.

found. Returning thence to Nuṣrānīyeh (186), we came to Kh. Kheirān <sup>278</sup> (192), a kilometre to the east of it. It is a small, ruined Arabic site.

*June 12.* A number of sites were examined in the fairly fertile, broken hill country west and south of eṭ-Ṭāfileh. About a kilometre and a half southwest of eṭ-Ṭāfileh we came to a small ruined Arabic village called Kh. Khāṣdeh <sup>279</sup> (193), above 'Ain Dhiyāb. No sherds were found. A short distance southwest of it on a small rise was a small, completely destroyed Nabataean site called Kh. Sherāreh (194), where a few Nabataean sherds were found. A kilometre to the north-northwest was an extensive, completely ruined Nabataean site called Kh. el-Beidā <sup>280</sup> (195), overlooking 'Ain el-Beidā. In addition to Nabataean sherds, there were numerous modern Arabic sherds. A kilometre to the north-northeast was a small ruin called Rujm Ḥebeis (196), about which nothing could be determined. No sherds were found. The fairly fertile area of the broken hill country west of Ṭāfileh was intensively cultivated, wherever it could be, and most of the sites in it which we examined had been reduced to such a state of destruction by reason of modern cultivation around and sometimes over them that little could be determined about their origin. Five kilometres to the west we came to Senefḥeh (197), an Arab village, which we could not examine because of the hordes of fleas which assaulted us as soon as we entered its confines.<sup>281</sup> We did find some Nabataean sherds in the fields below the village. Several kilometres to the north we came to Kh. ed-Deir (198), above 'Ain ed-Deir overlooking the descent to Seil el-Feifeh. Kh. ed-Deir is a small, completely ruined Byzantine monastery. A small number of Byzantine sherds was found there. Two kilometres to the northwest was a small ruined site called Kh. Umm She'ir (199), situated on a promontory overlooking the Seil el-Feifeh. There were no sherds, and nothing could be determined about this small *rujm* of flint blocks. Two kilometres to the south we came to 'Ain Jurbān (200), and about five kilometres south-southwest of it to 'Ain Ḥaddādeh (201), with no ruins by either of them. We were trying to establish the western limit of the ancient settlements on the western slopes of the hill country between Seil el-Feifeh and Seil el-Khaneizir.

*June 13.* Three kilometres south-southeast of 'Ain Ḥaddādeh we came to Kh. en-Nimteh <sup>282</sup> (202), overlooking the Seil el-Khaneizir. It was a small, completely destroyed ruin. No sherds were found. About five kilometres to

<sup>278</sup> ME II: 1, p. 323.

<sup>280</sup> ME II: 1, p. 317.

<sup>282</sup> ME II: 1, p. 317.

<sup>279</sup> ME II: 1, p. 316.

<sup>281</sup> ME II: 1, p. 318.

the east-southeast we reached a ruined structure called Qaṣr ed-Deir <sup>283</sup> (203), built over supporting vaults. Numerous Nabataean and mediaeval Arabic sherds were found. Eṭ-Ṭafīleh is visible to the northeast. A number of ruined walls, enclosing courtyards, surround the *qaṣr*. There is a large cistern on its south side. It overlooks the junction of the Wādī es-Sel'a with the Wādī Maṭṭan. To the south-southeast, across the deep Wādī es-Sel'a, there was visible Kh. es-Sel'a, <sup>284</sup> which, however, we did not get to visit. A few hundred metres southwest of Qaṣr ed-Deir, on a flat-topped rise, was a large, walled inclosure, in which a considerable number of Edomite EI I-II sherds and a fragment of an Astarte figurine were found. The enclosed area is completely ploughed over, and no vestiges of the former Edomite site remained with the exception of what appear to be the remains of a large tower at the southeast end of the enclosed rectangular area. This area which is aligned west-northwest by east-southeast measures approximately 80 by 55 metres. Some Nabataean sherds were also found there. Two kilometres to the north-northeast we came to a small *rujm*, situated on a knoll in the midst of cultivated fields. It is called Kh. Umm She'ir <sup>285</sup> (204) and overlooks the road leading to Ṭafīleh. Some Edomite EI I-II sherds were found by the *rujm*, as well as a small number of Nabataean, Roman, and mediaeval Arabic sherds. About three and a half kilometres to the east we came to a small, completely ruined Nabataean site called Kh. 'Ābel (205). There were a few Nabataean sherds there. 'Ain 'Ābel is below it to the east-southeast, and 'Ain Ḥasīb is half a kilometre away to the west-southwest. From Kh. 'Ābel we returned to Ṭafīleh. We found no Edomite or Nabataean sherds at Ṭafīleh. We may assume, however, that with its numerous springs and very strong position Ṭafīleh was a natural site for early settlements. <sup>286</sup>

June 14. A number of sites were examined between Seil el-Feifeh and the Wādī el-Ḥesā. Starting from Ṭafīleh we proceeded to the northwest through the modern Arabic villages of el-'Eimeh <sup>287</sup> (206), eḏ-Debā'ah (207), and Rabābeh (208). All of these wretched villages, situated on the top slopes of the hills overlooking the Seil el-Feifeh and the 'Arabah, were built over earlier ruins, which were so covered with modern debris that nothing at all could be determined about them. A kilometre west of Rabābeh, situated on a small flat hill in a sparsely cultivated area, was a small, completely destroyed site, which had once been enclosed with a wall. It is called Kh. el-Adanīn (209). Several Edomite EI I-II sherds were found, in addition to a few

<sup>283</sup> Musil, ME II: 1, p. 318, calls it Deir er-Rūm, or Qaṣr el-'Umeiā.

<sup>284</sup> ME II: 1, pp. 318-9.

<sup>285</sup> PA I, pp. 109-10.

<sup>286</sup> See above, p. 99, site 199.

<sup>287</sup> ME II: 2, p. 242.

Nabataean fragments, all of them exceedingly worn. Proceeding then down the slope leading ultimately to the south end of the Dead Sea, we came to Bîr Melîḥ (210), a deep well with a number of stone watering troughs by it. It is situated in a small *wādî*. On a small hill, immediately above the well to the northwest, is Kh. Bîr Melîḥ, a small, completely destroyed site, where we found some Nabataean sherds.

*June 15.* Four kilometres east-southeast of Kh. Bîr Melîḥ we came to Kh. Musrab (211), an extensive, completely ruined site on top of a hill, situated in the midst of a partially cultivated region. A few Nabataean and modern Arabic sherds were found. Five kilometres to the east, we came to Kh. Rihâb (212), a small Arabic ruin, with 'Ain Rihâb below it to the northwest. Four kilometres to the south-southwest of it we came to Kh. el-Qarn<sup>288</sup> (213), an almost completely destroyed site with one small, fairly intact Arabic building on the east side. Some Nabataean and Arabic sherds were found. A kilometre to the southwest was another small ruined site, with a few walls left. It is called Kh. Bîr Jummah (214). Below it to the west is a deep well, Bîr Jummah. A few Nabataean and modern Arabic sherds were found. A kilometre to the south is Kh. es-Sab'ah<sup>289</sup> (215), a small, completely destroyed site, where some Edomite and Nabataean sherds were found. There were numerous cisterns there, which probably belong to the Nabataean period.

*June 16.* About eleven kilometres northeast of eṭ-Ṭafîleh, almost two thirds of the way down the northern slopes of the el-Jebâl plateau, leading to the Wādî el-Ḥesā, we came to Kh. edh-Dherîḥ (216). It is a very large Nabataean settlement, overlooking the Wādî el-'Abân from the east. The sides and bed of the *wādî* are intensively cultivated for a considerable distance. 'Ain edh-Dherîḥ, a few hundred metres north of Qaṣr edh-Dherîḥ, is a very strong spring, whose waters irrigate the rich gardens and fields. About a kilometre beyond it is Birket el-'Abân, formed by water welling up through the earth in a natural basin, which has been deepened and enclosed with a wall. The *wādî* bed and the terraced fields on either side of it were once intensively cultivated down to and even beyond Birket el-'Abân. Qaṣr edh-Dherîḥ represents the much battered ruins of what was evidently originally a beautiful Nabataean temple, which may have been rebuilt by the Romans. It is built on a flat shelf of rock overlooking the Wādî el-'Abân and is rapidly disappearing, because the owner of the nearby gardens is using its large, well

<sup>288</sup> Musil, ME II: 2, p. 243, calls it Kh. el-Qarn

<sup>289</sup> ME II: 2, p. 243.



cut limestone blocks for various buildings of his own. It is a rectangular building, measuring approximately 28 by 19 metres, and is oriented north-northeast by south-southwest. There is a courtyard on the south side. Numerous bases and capitals and stones of single and double columns, lying on the ground in position as the columns fell, are to be seen. Friezes ornamented with metopes and triglyphs similar to those on Nabataean buildings at Petra, for instance, capitals adorned with intricate patterns of vines and leaves and flowers, and other building stones decorated with wreaths indicate the beauty of the original structure, which may be dated to the first century A. D.<sup>200</sup> Some dentilated building stones were also to be seen.<sup>201</sup> Only a few small fragments of Nabataean ware were found by the ruins of Qaṣr edh-Dherīḥ, the surface of the terrace on which it was built being practically swept clean of pottery remains. The hillside above it, however, which is covered with the remains of wall and house foundations, is littered with Nabataean sherds of all kinds. Traces of a large dam crossing the Wādī el-'Abān are visible in the wādī immediately north of the ruins of Qaṣr edh-Dherīḥ. The southern section of the new road being constructed by the Transjordan Government through central Transjordan leads now from Ṭafilēh as far south as Kh. edh-Dherīḥ.

Leaving Kh. edh-Dherīḥ at 9.40 a. m. and proceeding to the northeast, we arrived at 10.30 a. m. at the top of the ridge overlooking Wādī el-Ḥesā and commanding a view of el-'Aineh on the north side of the wādī. Descending the steep track which leads finally to the Wādī el-Ḥesā, we came fifteen minutes later to Rujm Jā'ez (217), a completely ruined site commanding a view over the approaches to the Wādī el-Ḥesā (Fig. 37). Careful search revealed a few Edomite EI I-II sherds and several mediaeval Arabic sherds. Most of the sherds had evidently been washed away by the recurrent rains. The site seems originally to have been enclosed with a wall. There are traces of terraced fields on the hillside below it. A short distance below it was a small *rujm* (218), the remains of a tower, which may be connected with Rujm Jā'ez. No sherds were found by it. 'Ain Jā'ez is a short distance below these sites to the southeast. Crossing the Seil el-Jā'ez, which is the continuation of the Seil el-'Awīl, and passing through a number of ancient terraced fields, we came to an extensive, completely ruined site, Kh. Jā'ez (219), where a small number of Nabataean sherds was found. There was another small, indistinguishable ruined site below it, with no sherds to help date it (220).

<sup>200</sup> *Bulletin* 55, p. 17; *ANNUAL* XIV, p. 63, note 2, and p. 64; *PA* I, pp. 107-8; *ME* II: 1, p. 243.

<sup>201</sup> *ANNUAL* XIV, pp. 37-8.

Both of these sites overlook the lower reaches of the Wādī Jâ'ez, which shows traces of considerable terracing in ancient times and is partly cultivated today. Crossing the Wādī el-Ḥesā, we came to el-'Aineh (221), situated on the lower reaches of the slope leading down from the Moabite plateau. There is a small, thriving village there, with numerous gardens and groves, watered by a number of very strong springs. The spring northeast of the modern Arabic village is called 'Ain el-Yehūdiyyeh, and the one west of the village is called 'Ain Megheisel.<sup>202</sup> Immediately to the north, above the springs and



Fig. 37. Rujm Jâ'ez, looking northeast.

gardens of 'Aineh on the top of a high hill connected on its north side with the slopes rising to the top of the Moabite plateau, we discovered a very large ancient site belonging to the end of the Early Bronze and the beginning of the Middle Bronze periods, that is, approximately 2200-1800 B. C., to judge from the very large quantities of sherds found. There are no visible walls or foundations left. The new road being built by the Transjordan Government has been cut through the hillside on which this Bronze Age site is located, revealing masses of sherds. Above is an acropolis belonging to the same period, oriented east-west and measuring approximately 100 by 30 metres. A small number of Nabataean sherds and some modern Arabic sherds were found. No Early Iron Age sherds were found, for the simple reason, as we

<sup>202</sup> M, p. 320; PA I, pp. 80. 81.

shall see, that the Early Iron Age site was situated some distance below it, nearer the Wādī el-Ḥesā. Subsequently we discovered another early Bronze Age site between Ṭafīleh and el-'Aineh at Kh. Mashmīl (232), which could also be dated through the sherds found on it to the period extending from approximately 2200 to 1800 B. C. Previously we had discovered the presence of related pottery at Feinān in the 'Arabah. These discoveries complete the tracing of the ancient Bronze Age trade-route through Transjordan. The northern part of this route was first discovered by Albright<sup>293</sup> in Gilead and Ammon. He also discovered the important Bronze Age site of Ader in Moab.<sup>294</sup> We were able to trace the continuation of this early Bronze Age road through most of Moab during 1933.<sup>295</sup> Apparently the road turned westward at Feinān and crossed over the 'Arabah to Sinai.<sup>296</sup> The possibility remains that some site belonging to this early Bronze Age period may yet be discovered, which will carry the Bronze Age trade-route all the way down to the Gulf of 'Aqabah. The discovery of this highway, which was used between 2200 and 1800 B. C., approximately, further substantiates the validity of the historical background of Gen. 14, as Albright has pointed out.<sup>297</sup> This chapter relates how the invading armies of the Eastern Kings marched down from Ḥaurān through Eastern Palestine as far south as el-Paran in Edom in the time of Abraham. The sites discovered, whose pottery remains indicate that they flourished in the so-called Patriarchal Age, are all on the only possible route the invading armies could have taken.<sup>298</sup> It is interesting to note that the new road being built through central Transjordan today crosses the Wādī el-Ḥesā at almost exactly the same point where the main highway crossed it during the early Bronze Age, the Early Iron Age, and afterwards in the Nabataean and Roman periods.<sup>299</sup> A few kilometres south of the Wādī el-Ḥesā we found a number of Roman milestones (228), marking the exact course of Trajan's highway, close to the point where it crossed the Wādī el-Ḥesā.

*June 17.* Immediately south of el-'Aineh, beyond the plain which slopes gradually down to the Wādī el-Ḥesā for about a kilometre and a half, is a very strong Moabite fortress called el-Medeiyineh (222). It is situated on an almost impregnable, high hill, overlooking a bend in the Wādī el-Ḥesā and

<sup>293</sup> APB, pp. 141-8.

<sup>294</sup> APB, pp. 142, 224; *Bulletin* 14, p. 10; 53, pp. 13-18; *ANNUAL* XIV, pp. 3, 45-7, 63, 65.

<sup>295</sup> *ANNUAL* XIV, pp. 4, 5, 7, 33, 44-5, 48, 50, 52-3, 55, 58, 63, 81-2.

<sup>296</sup> See above, p. 34.

<sup>298</sup> *ANNUAL* XIV, p. 82.

<sup>297</sup> APB, pp. 141-8.

<sup>299</sup> *ME* II: 2, p. 15.

commanding a view of much of the length of the eastern and western halves of this *wādī*. There is only one steep path on the northeastern side affording access to the fortress. The walls of the fortress, which are built of rudely hewn flint blocks, can still be traced around the flat topped area of the spur on which it is built. Forming an irregular rectangle in shape, they measure 39 and 63 metres, respectively, on the north and south sides, and 63 and 61 metres on the west and east sides. The fortress was evidently completely rebuilt in the mediaeval Arabic period. There are also some modern Arabic ruins there. On the east side of the fortress is a large enclosed area



Fig. 38. El-Medeiyneh, looking southwest.

(Fig 38), whose strongly built east wall, stretching across the entire east side of the outspur, afforded additional protection to the fortress, which could only be approached from this side (see plan of el-Medeiyneh, Pl. 19). Because of its exposed position and because of the thoroughness of rebuilding operations in the mediaeval Arabic period, only a few sherds of the early occupations of the site were found. Among them were several worn EI I-II sherds and one Nabataean fragment. There were also numerous mediaeval and modern Arabic sherds. Inside the walls of the fortress there was a maze of ruined foundations and heaps of building stones. El-Medeiyneh was a very strong Moabite fortress, guarding the southern boundary of Moab at the important crossing of the Wādī el-Ḥesā and the fertile area around the springs of 'Aineh. The northern boundary of Edom on the south side of the Wādī el-Ḥesā was guarded by a line of fortresses overlooking the bare, rugged,

steep slopes leading down to the Wādī el-Ḥesā and commanding the tracks which converge towards the springs of 'Aineh. This line of fortresses extends from er-Ruweihah<sup>300</sup> near the east end of the border of Edom to Rujm and Kh. Kerakeh (233-234) near its west end. In between were the border posts of Rujm Jā'ez (217) and Kh. Bākher (224).

Recrossing the Wādī el-Ḥesā and going eastward, we came to the junction of the small Seil 'Eleiliyāt<sup>301</sup> with the Wādī el-Ḥesā, where a small, completely ruined Nabataean site was found (223). A few Nabataean sherds



Fig. 39. Kh. Bākher, looking southeast.

were found there. Following a winding, steep track up the Neqb Bākher and reaching after a hard climb the barren, undulating plateau el-Muṣfarah,<sup>302</sup> we came to Kh. Bākher (224), situated on the northern end of the plateau. We had sighted it from el-'Aineh, approximately seven kilometres away. It is a strongly built, almost square structure (Fig. 39), oriented practically north and south and measuring 25.5 by 24.8 metres. There seem to have been rooms built against the sides of the walls on the inside of the building. In the center of the building are visible the foundation walls of a superimposed tower (?), measuring 9.4 by 8.8 metres (see plan of Kh. Bākher, Pl. 20). Around the *khirbeh* are the foundation walls of a number of small houses. The present walls of the *khirbeh* seem to have been reconstructed in the mediaeval Arabic period with large stones taken from an earlier structure.

<sup>300</sup> ANNUAL XIV, pp. 69. 77.

<sup>301</sup> ME II: 1, pp. 28-9.

<sup>302</sup> ME II: 2, p. 15.

The rows are irregular, with small stones between them. A few sherds were found, among them being several Edomite EI I-II sherds and several Nabataean and mediaeval Arabic sherds. The southwest corner of the structure, which is still fairly intact, is built according to a crude header-stretcher system, which may reflect the construction originally employed in the Edomite EI I-II site.<sup>303</sup>

About a kilometre to the west we came to Rujm el-Muṣfarah (225), built of large flint blocks in the form of a circle nine metres in diameter. There was another small *rujm* close by it to the east. No sherds were found. A kilometre to the west-northwest was a similar *rujm* (226), and a kilometre and a half southwest of it was a third one (227) called Rujm Muṣfarah el-ʿĀliyeh, by which a few Nabataean and mediaeval Arabic sherds were found. These *rujm* may be tombs. About a kilometre and a half to the west-northwest in the Wādī en-Nemein<sup>304</sup> we found three Roman milestones standing and one lying on its side (228), indicating where the Roman road had passed leading down to the Wādī el-Ḥesā. From there we returned to Kh. edh-Dherīḥ.

*June 18.* A kilometre and a half southwest of Kh. edh-Dherīḥ (216), on the side of the road ascending to the el-Jebāl plateau to the south, is a small, completely destroyed Nabataean site with only a few building stones strewn about to indicate its location and a small quantity of Nabataean sherds to mark its period of occupation. It is called Kh. el-Baqarah (229). On the top of the el-Jebāl plateau, about a kilometre and a half south of the beginning of the descent to Kh. edh-Dherīḥ, we came to Kh. Abū Benneh (230). It is an extensive ruined site in the midst of a cultivated area. It has been built over and ploughed over in part, with the result that but little of the original buildings remains. A small quantity of Edomite EI I-II sherds was found, as well as some Nabataean, Roman, and mediaeval Arabic sherds. Three kilometres to the southwest of it we came to Kh. en-Nôkhah (231), an extensive, ruined site, sprawled over the sides and top of a hill. It is partly occupied today, with the result that masses of modern debris cover most of the site. In addition, however, to large quantities of Arabic pottery, which cover the surface of the site, a small number of Edomite sherds was found, as well as some Nabataean and Roman sherds.

*June 19.* Two kilometres northwest of Kh. Abū Benneh (230) we came to Kh. Mashmīl<sup>305</sup> (232), situated on a low broad hill in the midst of a culti-

<sup>303</sup> ANNUAL XIV, p. 54; see above p. 61.

<sup>304</sup> ME II: 2, pp. 14-16.

<sup>305</sup> ME II: 1, p. 301; II: 2, p. 242; PA I, p. 109.

vated area. It consists of a maze of ruined foundations, among which are some cave-cisterns. There were a few pieces of Nabataean and Roman pottery and several sherds which belong unmistakably to the Bronze Age period extending approximately 2200-1800 B. C. Kh. Mashmîl is thus on the early Bronze Age road which traversed the length of Eastern Palestine.<sup>306</sup> This road continued in all probability to Taffileh, although no sherds of the period in question were found there. About a kilometre and a half to the north of Kh. Mashmîl is Rujm Kerakeh <sup>307</sup> (233), a ruined tower measuring

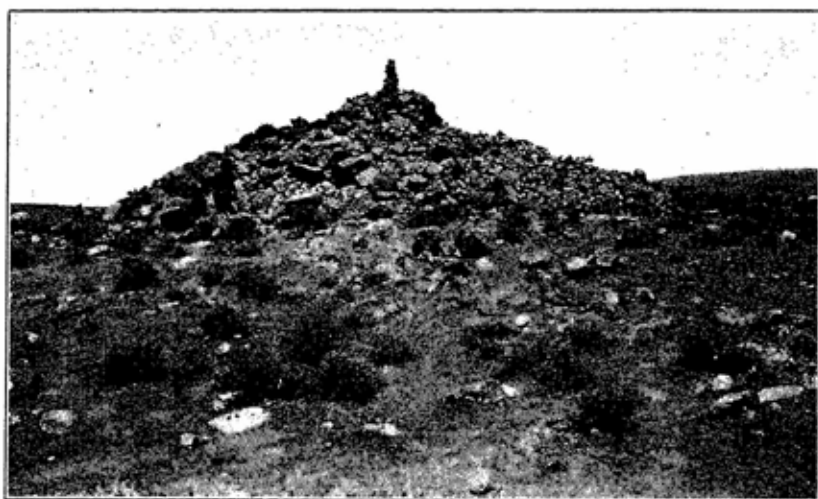


Fig. 40. Rujm Kerakeh, looking north.

originally approximately seven metres square. It is situated on a rise, beyond the cultivated area, near the northwestern end of the el-Jebâl plateau, overlooking the beginning of the descent to the Wādî el-Ḥesâ and to the Dead Sea. On top of the *rujm* is a small cairn, serving as a triangulation point for modern survey purposes (Fig. 40). Scattered around the *rujm* were some Edomite sherds, indicating that it was a part of the northern border defences of the Edomite kingdom.<sup>308</sup> Below the northeast corner of Rujm Kerakeh is a deep cistern. A kilometre to the north-northwest of Rujm Kerakeh, situated on a high, flat-topped, isolated hill accessible only by a steep path from the southwest, is an extensive, formerly walled, completely destroyed site called

<sup>306</sup> See above, p. 104.

<sup>308</sup> See above, p. 106.

<sup>307</sup> PA I, p. 108; ME II: 2, p. 242.

Kh. Kerakeh (234). It was visible from Rujm Kerakeh. Although no sherds were found, it seems likely that Kh. Kerakeh may also have been an Edomite site, commanding even a better view than Rujm Kerakeh of the beginning of the descent to the Wādī el-Ḥesā and to the south end of the Dead Sea.

*June 22.* An important Nabataean caravanserai was discovered at Qal'at Freifreh (235), near the Ḥejâz railway line south of Qaṭrânî. It is a large, completely ruined structure, originally constructed of large limestone blocks, some of which are still in place at its corners. It measures approximately 45 by 30 metres. There are numerous large cisterns in the immediate vicinity and a completely ruined *birkeh* beyond the northwest corner. Large quantities of Nabataean sherds of all kinds were found. There are indications of numerous, large underground vaults. Mr. Head has suggested that the somewhat similar ruins at Mafrak may also belong to a Nabataean structure. The Nabataean caravanserai at Qal'at Freifreh is on the Nabataean trade-route which led to Nakhl,<sup>309</sup> Qaṣr Meshîsh, and Bâ'yir Wells,<sup>310</sup> and thence to Teimā and Medâ'in Şâleh.

*May 2.* The history of settlement in Edom proved to be similar to that established for Moab.<sup>311</sup> We had an opportunity to check our conclusions with regard to the history of the occupation of Moab by examining a section of Moab which we had not been able to visit in 1933. Proceeding south from 'Ammān on May 2, 1934, we found that the previous day's rain had been so heavy as to stop all traffic into southern Edom, for which we were headed. Instead, we drove to Mādebā and thence to Jebel Şiyāghah, the ancient Mt. Nebo (236), on top of which the Franciscans had recently cleared the remains of a Byzantine church.<sup>312</sup> The church occupies a fine vantage point, commanding a view of much of the Jordan Valley and the hill-country of Palestine. The towers of Jerusalem and Bethlehem could be made out easily with the naked eye. The slopes of Mt. Nebo and the plain stretching below it to the Dead Sea are cultivated in spots, and the cultivated territory east of Mt. Nebo is quite productive. The land of Moab, like that of Edom, was and still is fruitful. There are numerous springs, the soil in the arable regions is good, and the mineral wealth is considerable particularly in Edom. Moses not only viewed a Promised Land across the Jordan to the west but stood and died in a blessed country to the east of the Jordan.

<sup>309</sup> ANNUAL XIV, p. 66.

<sup>310</sup> *Ib.*, pp. 72-4; AJA XXXVII, pp. 381-6.

<sup>311</sup> *Ib.*, pp. 81-3.

<sup>312</sup> AJA XXXVIII, p. 198; Conder, *Survey of Eastern Palestine*, pp. 198-203.



*May 3.* Within a comparatively small radius of Mt. Nebo a number of Early Iron Age settlements and one Bronze Age site were found. About five kilometres below Mt. Nebo to the west, on the plain stretching to the Dead Sea, is Rujm el-Herī (237), a small completely ruined site, surrounded by a wall. It is situated on a small rise, overlooking Wādī el-Herī below it to the south, in which the water from 'Ain el-Herī flows for a short distance before losing itself in the sands. The irregular outline of the wall surrounding the site could be made out, although much of it does not seem to be in its original state. The enclosed area is filled with heaps of stones, some of which have been arranged into pens. The entrance to the site seems to have been on the east side (see plan of Rujm el-Herī, Pl. 21). A small quantity of Moabite EI I-II sherds was found, in addition to several Nabataean and Byzantine sherds. Numerous fragments of ferruginous sandstone were found near Rujm el-Herī and on a hill about a kilometre to the west of it. On the east side of this hill was a dolmen measuring four by two metres, its roof formed by one great sandstone slab set over walls made of smaller slabs. There were several completely destroyed dolmens in the vicinity.

A steep trail from Jebel Şiyāghah leads down to the 'Ayūn Mūsā, below it to the north-northeast, whose strongly flowing waters irrigate a number of gardens. Most of the water, however, is now pumped to Mādebā. The rich springs were well guarded during the Moabite period. On top of the steep hill to the northwest, immediately overlooking the springs, are the remains of a strong Moabite fortress called Kh. 'Ayūn Mūsā<sup>313</sup> (238). It was once surrounded by a strong wall, which seems in places to have been strengthened by a revetment. It was cut off from the broken plateau land to the north by a dry moat. The general plan of the site, whose lines could for the most part only approximately be sketched by following the contours of the flat top of the hill on which it is built (for plan of Kh. 'Ayūn Mūsā see Pl. 22), seems to be similar to that of the Moabite fortress of el-Medeiyineh,<sup>314</sup> overlooking the Wādī el-Môjib. The slope of the hill in front of Kh. 'Ayūn Mūsā, leading to the edge of the cliff overlooking Wādī 'Ayūn Mūsā and its springs, was originally enclosed with a wall, the outlines of which can still be seen. On the hillsides below the fortress and within the walled area large quantities of EI I-II sherds were found, similar to those discovered at other Moabite sites during the preceding year.<sup>315</sup> Some Nabataean sherds were also found.

*May 4.* About three kilometres south-southeast of Jebel Şiyāghah is Kh. Mekhayyet<sup>316</sup> (239), overlooking the Wādī el-'Afrīt on the east and the Seil

<sup>313</sup> It is to be identified with el-Meshhed; cf. ANNUAL XIV, pp. 26-7; M, pp. 341-6.

<sup>314</sup> ANNUAL XIV, pp. 52-3, pl. 12.

<sup>315</sup> *Ib.*, pp. 14-22.

<sup>316</sup> M, pp. 335-40.

and 'Ain Jedeid on the west. Looking east from Kh. Mekhayyet across Wādī 'Afrīt, we could see Rujm Mekhayyet, which, however, we did not get to visit. The fortress<sup>317</sup> was originally built much on the plan of Kh. 'Ayūn Mūsā and is isolated by a moat from the rest of the flat top of the outspur on which it is built, which extends to the south. The moat is further strengthened by a rectangular building immediately above it to the north, part of its foundation walls still being visible. Stretches of the strong outer wall which once enclosed the site can still be seen on the west and northeast sides. At the north end of the site are the remains of a Byzantine church, with a beautiful mosaic floor which had previously been cleared and studied.<sup>318</sup> Large quantities of Moabite EI I-II sherds were found, particularly on the southwestern side and slope of the fortress area. On a dump heap below the northeast corner of the hill on which the church and the fortress are located we found Moabite and Byzantine sherds.

About five kilometres east-northeast of Jebel Şiyāghah, on top of a high, flat-topped hill, is Kh. Qurn el-Kibsh<sup>319</sup> (240). It is oriented northeast by southwest, and measures roughly 285 by 95 metres. No ruins were left, the entire top of the hill having been ploughed over. At various points, however, there were remnants of the great wall, which had originally enclosed it. Within this area and on the slopes of the hill which overlooks the Wādī Salmah leading west-southwest there were found large quantities of EB III-MB I sherds, indicating the presence of a large early Bronze Age settlement of approximately 2200-1800 B. C. The history of the section of Moab in the vicinity of Jebel Şiyāghah is the same as that of the rest of Moab. There was an occupation between 2200-1800 B. C., followed by a blank period extending down to the thirteenth century B. C. when only roaming Bedouin peopled the land. Then there was another period of sedentary settlement from the thirteenth down to eighth, and to a lesser degree down to the sixth century B. C. Another blank period ensued then in the history of permanent settlements down to the Nabataean period.

*July 6-12.* A brief trip was undertaken by the expedition between July 6 and 12 in order to make a quick survey of southern Palestine between Beer-sheba and 'Aqabah, and in order to examine some of the approaches to the 'Arabah from the Palestinian side and see if the border of Edom extended beyond the western side of the 'Arabah. The southern boundary of Edom

<sup>317</sup> Musil's plan, M, p. 335, fig. 155 seems to be upside down.

<sup>318</sup> QDAP III: 2, p. 97; IV: 3, p. 112; RB 1934, pp. 385-401.

<sup>319</sup> M, p. 344.

is marked by the fortresses<sup>320</sup> on top of the Neqb esh-Shtâr overlooking the Hismeh Valley. Edom also controlled the caravan tracks leading through the Hismeh Valley to the Gulf of 'Aqabah. The eastern boundary is indicated by the line of fortresses<sup>321</sup> which extends a few kilometres west of the north-south line on which Da'jānīyeh is located. It is likely that more of these fortresses can be found to the south and southeast of those we have thus far discovered on the eastern boundary. The northern boundary of Edom was protected by the line of fortresses<sup>322</sup> overlooking the Wādī el-Ḥesā. The western boundary of Edom extended throughout the length of the 'Arabah, with its Edomite fortresses and mining and smelting centers,<sup>323</sup> although for much of the time between David and Ahaz, Edom lost control over the 'Arabah. No archaeological evidence was found to support the theory that even in its early history the territory of Edom included not only the hill country east of the 'Arabah but also west of it.<sup>324</sup> The possibility that Edomite power once extended into parts of southern Palestine is suggested by a number of biblical verses, which definitely locate Edom-Se'ir<sup>325</sup> on the west side of the 'Arabah.<sup>326</sup> All of these verses, however, in their present form, must be dated to the exilic period or later.<sup>327</sup> They reflect the Idumaeon

<sup>320</sup> Sites 31, 34 on the map.

<sup>321</sup> Sites 183, 184, 185 on the map.

<sup>322</sup> See above, pp. 104-106; sites 217, 224, 230, 233, 234 on the map.

<sup>323</sup> Sites 9-12, 14, 25 on the map.

<sup>324</sup> Buhl, *Geschichte der Edomiter*, pp. 22, 26; Gray, *Numbers*, p. 206; Driver, *Deuteronomy*, p. 30; Robinson, *The Sarcophagus of an Ancient Civilization*, p. 176; Burney, *The Book of Judges*, p. 34; Abel, *Géographie de la Palestine*, I, pp. 281-4, 389-91.

<sup>325</sup> Judges 5, 4, 5; Deut. 33, 2; Habakuk 3, 3, 12-3; Ps. 68, 8-9.

<sup>326</sup> Deut. 1, 2, 44; Numbers 20, 16 b<sup>2</sup>; Josh. 11, 17; 12, 7; Gen. 36, 6-8; I Chron. 4, 42-3; Joel 4, 19; Obadiah 1, 8-9, 19-21.

<sup>327</sup> Thus, for instance, at least for the glossator, who inserted נִשְׁעִיר in Deut. 1, 44, which speaks of the defeat inflicted by the Amorites on the Israelites in Se'ir as far as Hormah, Se'ir is situated on the west side of the 'Arabah (cf. Marti, in *Die Heilige Schrift des Alten Testaments*, ed. 4; Steuernagel, *Das Deuteronomium*). In the comparable verse in Numbers 14, 45, however, we are told merely that the Amalekites smote the Israelites as far as Hormah; there is, properly, no mention of Se'ir in this verse. Similarly Deut. 1, 2 must be regarded as a gloss to Deut. 1, 19, 20, the first verse referring to the journey of the Israelites from Horeb via Mt. Se'ir to Kadesh-Barnea, while the latter verses speak of the journey of the Israelites from Horeb via the hill country of the Amorites to Kadesh-Barnea, and make no reference to Mt. Se'ir (cf. Marti, ad loc.). In Josh. 11, 17 and 12, 7 the idealized boundaries of Israel are described as extending from Mt. Halaq that rises towards Se'ir as far as Ba'al-Gad in the valley of Lebanon at the foot of Mt. Hermon, indicating that for the late author of these passages Se'ir was on the west side of the 'Arabah, as it was considered to be

settlement in southern Palestine, which the author of Deut. 23, 8 probably had in mind when he said: "You shall not abominate (i. e., consider as outside the pale of the community) an Edomite, because he is your brother," meaning those Idumaeans who had become Yahweh worshippers.<sup>328</sup> That Edom in the pre-exilic period was east of the 'Arabah is also attested to in the stories of the Exodus through and around Edom.<sup>329</sup>

*July 6.* From Beersheba we drove to Qurnub (241), a very large, completely ruined Roman-Byzantine site, which was, however, originally occupied by the Nabataeans.<sup>330</sup> There were numerous cisterns among the ruins. The spring in the deep Wādī es-Sidd, on the south side of the high hill called es-Sela' on which Qurnub is built, is protected by a very strong erosion dam built across the wādī. It is several hundred metres northwest of the spring

by the glossator in Deut. 1, 2. 44. Har Ḥalaq has been identified by Musil, ME II: 1, pp. 170, 197, with Jebel Ḥalaq on the northwestern side of the Wādī Marrah. The Wādī Marrah, together with the Wādī Fiqreh, was considered then the southern boundary of Judah, which included Se'ir (Buhl, *Geschichte der Edomiter*, p. 24; Gray, *Numbers*, p. 266; Driver, *Deuteronomy*, p. 30; Robinson, *The Sarcophagus of an Ancient Civilization*, pp. 176-182). The normal boundaries were considered as extending from Dan to Beersheba; cf. Judges 20, 1; I Sam. 3, 20; II Sam. 17, 11; I Chron. 21, 2; Amos 8, 14. The westward extension of Edom beyond the 'Arabah is referred to in Numbers 20, 16 b<sup>2</sup>, which here alone refers to Kadesh, as a city on the uttermost edge of Edom's border; it is probably a gloss belonging to the same late period as the above glossatory passages. The occupation of southern Judah by the Edomites sometime after the exile is alluded to, for instance, in Ezekiel 36, 5 where Edom is denounced by Yahweh for "having taken over my land as a possession for themselves . . ."; cf. Ezekiel 25, 12-14; 35; Obadiah 1, 1-7. 10-14; Malachi 1. 2-5; Jer. 49, 7-22; Psalm 137, 7; cf. von Bulmerincq, *Malachi* I, pp. 133-6; II, pp. 18, 22-3, 37; Torrey, "The Edomites of Southern Judah," *Journal of Biblical Literature*, 1898, pp. 16-20. The western boundary of Edom will be discussed in more detail in an article "The Boundaries of Edom" to be published in the *Hebrew Union College Annual*.

<sup>328</sup> Suggested by President Julius Morgenstern; cf. Strabo, *Geography*, XVI, 2, 34.

<sup>329</sup> Cf. Deut. 2, 4-8 a. 29 with Num. 20, 14-21; 21, 4; Deut. 2, 1 b; Judges 11, 16-18; II Chron. 20, 10. In the present state of our understanding of these mutually contradictory accounts, it is perhaps judicious not to utilize them to date the event they chronicle. In their present form they may reflect exilic and post-exilic rather than pre-exilic political conditions and religious attitudes; cf. PEFQS 1934, pp. 187-8. The fact remains that in both accounts the memory exists of an exodus taking place after the Edomites had occupied their territory; the testimony of these accounts may be accepted with regard to the extension of Edom east and not west of the 'Arabah.

<sup>330</sup> QDAP III: 3, p. 133; ME II: 2, pp. 25-8; for the plan of the site see ME II: 2, p. 21, fig. 10; Alt, *Palästinajahrbuch* 1934, pp. 19-20.

(Fig. 41). Above this dam were the ruins of two others, which also served to prevent the soil from being carried away during the rainy seasons.<sup>330a</sup> The area of the formerly walled city is filled with a maze of ruins, among which the foundations of several Byzantine churches are discernible. Large quantities of Nabataean sherds of all kinds were found, as well as Roman and

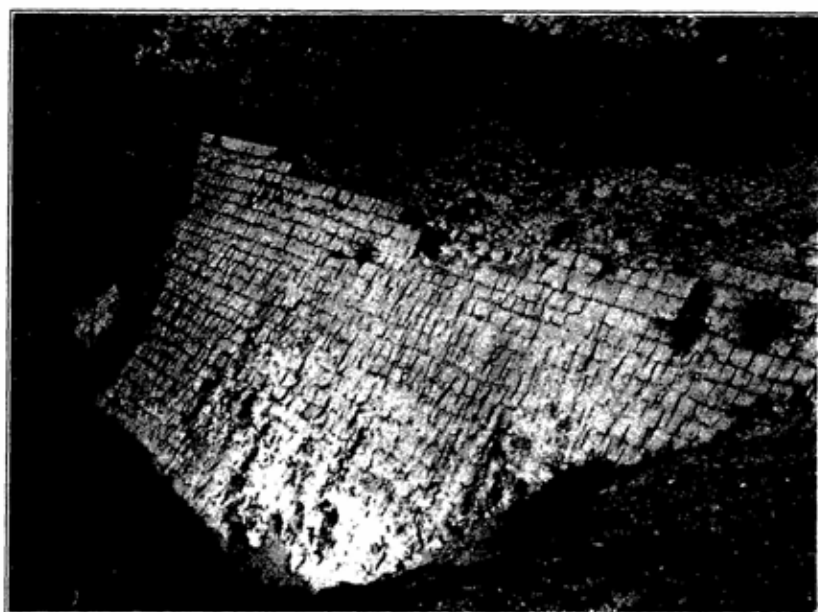


Fig. 41. Erosion dam at Qurnub.

Byzantine sherds. There were numerous pieces of imported sigillata ware with creamy core, and also of less highly glazed Nabataean sigillata with reddish core. Qurnub was on the main Nabataean trade-route leading from Aila to el-Hosb and on to Gaza,<sup>331</sup> a route subsequently taken over by the Romans.<sup>331a</sup> Qurnub has been identified by Hartmann with Mampsis.<sup>331b</sup> The identification of Qurnub with Tamar is incorrect.<sup>331c</sup> No sherds earlier

<sup>330a</sup> ME II: 2, p. 27.

<sup>331</sup> See above, p. 16.

<sup>331a</sup> Alt, *Palästinajahrbuch* 1934, pp. 22-4; *Forschungen und Fortschritte* 1934, pp. 244-5.

<sup>331b</sup> ZDPV 36, p. 110; Alt, *Palästinajahrbuch* 1934, p. 20; AA II, pp. 24. 26. 33. 50.

<sup>331c</sup> *Bulletin* 55, p. 18; Alt, *Palästinajahrbuch* 1934, p. 24, n. 2; cf. Steuernagel, *Die Einwanderung der Israelitischen Stämme in Kanaan*, p. 75; Auerbach, *Wüste und Gelobtes Land*, pp. 79, 101.

than Nabataean were found, although they may possibly be completely covered with later debris.

*July 7.* Obtaining several pack camels to carry supplies, we proceeded on foot south-southeast from the Wādī Şfei,<sup>332</sup> stopping first at Rujūm Şfei (242). There were several small, completely ruined towers and houses built on a flat topped elevation. No sherds were found, but the type of construction was similar to that of other small Byzantine sites in the Negeb, where Byzantine sherds were found. We came then to Qaşr Şfar (243), a small rectangular structure measuring 7.5 metres square, overlooking the precipitous descent of the Neqb Şfar. It is built of rudely cut, large limestone blocks and is still standing to a height of seven courses. There are the foundations of several other buildings on the small flat ridge on which Qaşr Şfar is situated. A small number of Byzantine sherds was found, and also a Byzantine lamp (Fig. 42). Proceeding to the south-southeast, we came to Kh. Şfar (244), a completely ruined building about nine metres square on top of a hill on the way down the Neqb Şfar. There is a walled-in courtyard on its east side. A few Byzantine sherds, and also two Nabataean sherds were found. Descending the precipitous Neqb Şfar, we came to Rujm Şfar (245). It is a ruined Byzantine tower measuring nine and a half metres square. A small number of Byzantine sherds was found by it. From there we moved on to 'Ain Fiqreh in the Wādī Fiqreh. The area traversed from Qurnub on was completely destitute of any sites earlier than the Byzantine ones listed. The two Nabataean sherds found at Kh. Şfar may have come from some passing Nabataean caravan. The Nabataean caravans evidently trekked directly from el-Ḥoşb to Qurnub. The journey was probably made in two days, a stop being made in all likelihood in the vicinity of 'Ain Fiqreh at the end of the first day. Inasmuch as we had previously examined the region immediately beyond el-Ḥoşb to the west, it was not necessary for us to continue on to el-Ḥoşb. It was clearly established then that from Qurnub down to el-Ḥoşb there were no Early Iron Age or Bronze Age settlements. The Edomites in the 'Arabah had really little to fear from the arid, barren, unpeopled wastes of southernmost Palestine in the Early Iron Age. The nomads who may have wandered there would hardly dare invade the 'Arabah with its fortified centers at Kh. Ḥamr Ifdân and Mene'iyyeh. Garrisons were undoubtedly also stationed at the mining camps between these two points. It is interesting to note that the Judaeans entered the 'Arabah from the north, but never from the west.<sup>333</sup>

<sup>332</sup> ME II: 2, pp. 23. 29.

<sup>333</sup> II Kings 3, 4 ff.

*July 8.* Turning westward, we made our way through the Wādī Fiqreh, passing the Jebel el-Maḍrah (Fig. 43), which has been suggested as the site of Mt. Hor,<sup>334</sup> and continued on through the Wādī Marrah, where our car met us. From there we drove to the top of the Neqb el-Ghârib. Getting the car

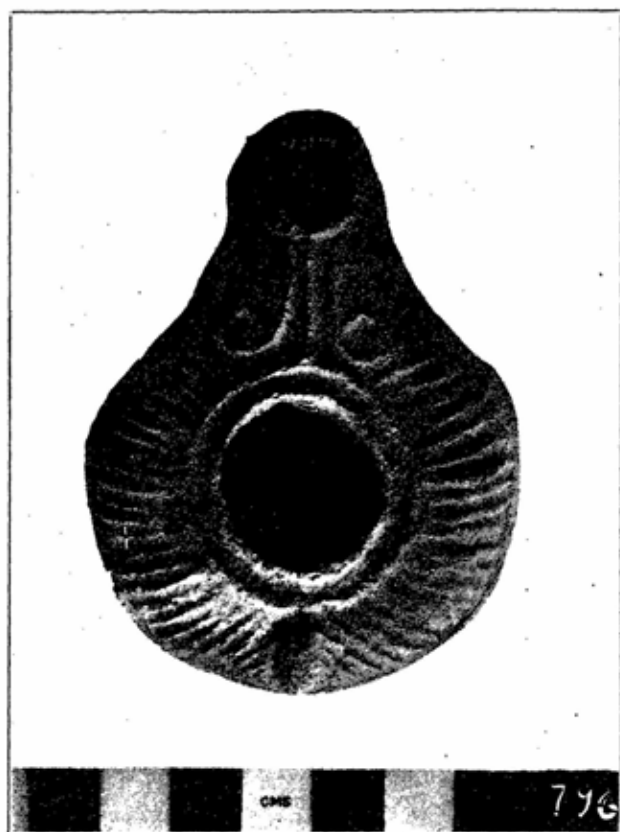


Fig. 42. Byzantine lamp from Qaṣr Sfar.

down from and back to the top of the Neqb el-Ghârib was a considerable feat. No settlements of any kind were found along the entire length of the Wādī Fiqreh and the Wādī Marrah up to the top of the Neqb el-Ghârib. Between the Neqb el-Ghârib and the main highway running from Beersheba to 'Anjā Ḥafir, Qoṣeimeh, and 'Aqabah, we came upon several Roman-Byzan-

<sup>334</sup> Olmstead, *History of Palestine and Syria*, p. 253; Robinson, *The Sarcophagus of an Ancient Civilization*, pp. 263-84.

tine sites. At Rujm eth-Theikah (246) there was a small, ruined tower measuring 7.5 by 5.5 metres, with a small number of Nabataean and Byzantine sherds by it. Immediately north of it on top of a hill is a completely destroyed site called Kh. Abū er-Reteimāt (247), where some Roman-Byzan-



Fig. 43. Jebel el-Maḍraḥ, looking southeast.

tine sherds were found. From there we drove to the large Byzantine site of Šbeīṭah (248), which is being excavated by the Colt expedition. Some Nabataean sherds were found there.<sup>335</sup>

South of the Wādī Marraḥ and the Wādī Fiqreh a natural track to the 'Arabah leads through the Wādī Romān. Its eastward continuation, the Wādī

<sup>335</sup> AJA XXXVIII: 1. p. 195; PEFQS 1935, pp. 9-11; ME II: 2. pp. 38-43.



es-Sîq, joins the Wâdî el-Ghamr, which is the southern extension of the Wâdî el-Jeib in the 'Arabah. We were unable to examine this track ourselves, but Frank's investigations seem to indicate that also in the Wâdî Român and its continuation no Early Iron Age or Bronze Age sites were found.<sup>336</sup> In the Wâdî Român, at el-Biyâr below Râs Erdeideh,<sup>337</sup> Frank found the remains of a small ruined site, where, to judge from numerous pieces of slag scattered about, smelting operations had been carried on. At the southwest corner of the site were several furnaces. The sherds, according to Frank, were Roman and Arabic. Nearby he found the socket of a Roman milestone. Following the *wâdî* eastward, he came to Qaşr el-Maḥallah, which, to judge from "the very fine pottery" <sup>338</sup> found there, is probably Nabataean. He discovered and planned several sites in the Wâdî es-Sîq, namely Qaşr Wâdî es-Sîq and Qaşr el-'Abd, which he adjudges Roman,<sup>339</sup> arriving finally at the ruins of Moyet el-'Awâd in the 'Arabah, where he found large quantities of "very fine pottery," <sup>340</sup> which I imagine to be Nabataean. Usually Frank designates pottery which we have definitely been able to determine as belonging to the Early Iron Age as being "very old," <sup>341</sup> or as "pre-Roman." <sup>342</sup>

*July 9-10.* We next proceeded to 'Aujâ Ḥafir (249), where we picked up numerous Nabataean sherds on the hill overlooking the modern village.<sup>343</sup> From there we drove on to Qoşimeh and the next day to 'Ain el-Qudeirât (250), which irrigates some gardens and fields in the Wâdî Qudeirât. In the Wâdî Qudeirât is the small mound called Kh. Qudeirât (Fig. 44). It is a small fortress, a plan of which has been published by Lawrence and Woolley.<sup>344</sup> Many of the stones of the ruin, some of whose walls still protrude slightly above the surface of the ground, were utilized by the Turks for building material. The general outlines of the fortress, however, are still visible, and the main parts of its walls seem to be fairly intact. A sufficient number of sherds was found on the sides of the mound to enable us to date the site. They belong to the period extending approximately from the tenth to the eighth century B. C. Professor Albright examined the sherds independently and agrees with the dating. He had previously, after a study of the plan by Lawrence and Woolley, dated the site to approximately the tenth century B. C.<sup>345</sup> The sherds are all Judæan in character, including, among other

<sup>336</sup> AA, pp. 271-6.

<sup>337</sup> ME II: 2, p. 204; AA, pp. 271-2, Pl. 28.

<sup>338</sup> AA, p. 273.

<sup>339</sup> AA, pp. 273-4, Pl. 32.

<sup>340</sup> AA, pp. 275-6.

<sup>341</sup> AA, p. 244; see above, p. 47.

<sup>342</sup> AA, p. 242; see above, pp. 43-4.

<sup>343</sup> QDAP III: 3, p. 133.

<sup>344</sup> PEFA III, p. 65.

<sup>345</sup> *Bulletin* 52, p. 8.

types, some typical cooking pot rims and fragments of ring-burnished ware. The fact that this small fortress is Judaeen rather than Edomite lends further support to our conclusion that the western boundary of Edom in the Early Iron Age did not extend beyond the western side of the 'Arabah. Above 'Ain Qudeirât, on the south side of the Wâdî Qudeirât, we found the ruins of a very small contemporary Early Iron Age site (251), centered about the



Fig. 44. Wâdî Qudeirât, with Kh. Qudeirât back of trees.

ruins of a small watch-tower. In addition to Early Iron Age sherds belonging to transition EI I-II, several Nabataean sherds were found there.

Returning to Qošeimeh, we drove to 'Ain Qadeis (252), which is situated in a barren area where no traces of occupation during the Early Iron Age, or for that matter during any other period, were to be found. Of the three main sources of water in this region, namely 'Ain Qošeimeh, 'Ain Qadeis (Fig. 45), and 'Ain Qudeirât, the last is by far the strongest. The fact that it was chosen as the site of an Early Iron Age fortress leads one to believe that if any one site is to be identified with Kadesh-Barnea, 'Ain Qudeirât seems to be the most logical place. The fortress was built on the site where several centuries earlier the central encampment of the Israelites had been located

during their sojourn in Sinai. As has been pointed out by McCown,<sup>346</sup> all three springs must have served the needs of the wanderers.

From 'Ain Qadeis we proceeded southward to locate and check up on the Tell Qaṭaf described by Dom B. Ubach, on which, according to him, was located the tomb of Miriam, the sister of Moses.<sup>347</sup> We located the site described by him (253). It is, however, known as Rujm Umm Qaṭar. It is an absolutely natural mound, on which are several modern graves, as there



Fig. 45. 'Ain Qadeis, looking northwest.

are on the adjacent mounds. Some of the graves may go back to the Byzantine period, inasmuch as a few late Byzantine sherds were found there. There are several deep cisterns in the Wādī Umm Qaṭar immediately southwest of Rujm Umm Qaṭar. From there we proceeded to 'Aqabah.<sup>348</sup>

*July 11.* Returning on the Palestinian side, we examined the region east of the line between 'Aujā Ḥafir (249) and Qoṣeimeh, to see if any of the small ruins known to be there could possibly belong to the Early Iron Age, like the small fortress at 'Ain Qudeirât. On the hillsides east and west of Birein<sup>349</sup> (254), where the Turks built a fine, deep cistern during the World War, we found several small, completely ruined Byzantine sites and one small Nabataean-Roman-Byzantine site, with a small number of sherds at each place enabling us to fix its general period. Going southeast, we came to a

<sup>346</sup> *Bulletin* 43, p. 28.

<sup>347</sup> RB XLII, pp. 562-8.

<sup>348</sup> See above, pp. 46-7.

<sup>349</sup> ME II: 1, p. 206.

large, walled enclosure called 'Amâret Khrâsheh (255), where a few worn Byzantine sherds were found. Continuing to the southeast, we came to the very deep Bîr Ḥafîr (256), with many deep grooves on its sides, worn there by the ropes of the drawers of water. East and southeast of Bîr Ḥafîr we examined a cluster of small ruins, all of which were occupied only in the Byzantine period (257-261). Small cleared fields and terraces were visible by some of them, where dry farming was attempted on a small scale. The necessary water supplies for these small Byzantine sites were stored up in cisterns. This entire district has not been occupied since the Byzantine period, and only to a slight degree in the preceding Nabataean and Roman periods; before that time, it was not occupied at all. Inasmuch as we did not examine every possible site in this entire area all the way down to the 'Arabah, the possibility remains that somewhere in this region an Early Iron Age site or even a Bronze Age site may be discovered, but it is most unlikely. The area is shunned even by the Bedouin. In all probability, the fortress at 'Ain Qudeirât represents the only Early Iron Age fortress in this entire stretch of southernmost Palestine. There is definitely no evidence of the extension of Edom west of the 'Arabah during the Early Iron Age.

We have seen that no traces of Bronze Age settlement were found in southernmost Palestine. The absence of Bronze Age settlements there is in general accord with the history of Edom, including the 'Arabah, where between the nineteenth and thirteenth centuries B. C. there was a practically complete absence of sedentary occupation.<sup>350</sup> This fact disposes of the idea, based on Deut. 2, 12, 22 and Gen. 14, 6 that the Horites-Khurrians<sup>351</sup> were at home in Se'ir and were conquered and dispossessed there by the Sons of

<sup>350</sup> The lack of any traces of sedentary occupation in southernmost Palestine and in Edom between the 19th and 13th centuries B. C. invalidates the recent attempt, on the basis of certain passages in the Râs esh-Shamrah texts, to revive the theory made popular by Winckler of a Muṣri-Midianite civilization in these regions; PEFQS 1934, pp. 146, 183; Winckler, MVG 1898: 1. Olmstead, partly on the basis of his archaeological observations in the Negeb which are in general agreement with our own, long ago rejected this theory, which he refutes in his *Western Asia in the Days of Sargon*, pp. 56-71; cf. Montgomery, *Arabia and the Bible*, p. 98; *Bulletin* 55, p. 26. Dussaud, *Revue de l'Histoire des Religions*, CIX: 2-3, 1934, p. 122, is in error when on the basis of the Râs esh-Shamrah texts he places the Israelites in the regions of south Palestine in the first half of the second millennium B. C. Abel, *op. cit.*, pp. 281, 389-90, is mistaken when he accepts the historicity of the presence of Horites in Mt. Se'ir, which he locates west of the 'Arabah; cf. Albright, JPOS XV, 1935, pp. 187-8.

<sup>351</sup> For the identification of the Horites with the Khurrians see Speiser, "Ethnic Movements in the Near East," in *ANNUAL XIII*, pp. 20-9; Albright, "The Horites in Palestine," in Leary, *From the Pyramids to Paul*, pp. 19-21.

Esau.<sup>351a</sup> The presence of Khurrians in Palestine during the Amarna Age has been abundantly substantiated,<sup>352</sup> and it is particularly during the Amarna Age that there is a blank period in the history of settlement in Edom, as well as in Moab. It is significant that the Tell el-Amarna tablets, as well as the Egyptian lists of towns, are silent with regard to this period in Eastern Palestine.<sup>353</sup> The biblical material dealing with the Horites leaves much to be desired, references to the Horites in Palestine having evidently been frequently changed for other names. The Septuagint versions of Gen. 34. 2 and Josh. 9, 7 substitute Khorraios, for the Hiwwî of the Masoretic text.<sup>354</sup> The confusion is illustrated in Gen. 36, where verse 2 reads Hiwwî, while verses 20 and 30 designate the same family with Hôrî. It has been suggested that the Hiwwî of the Masoretic text should be changed to Hôrî in Josh. 11, 3, Judges 3, 3, and II Sam. 24, 7, because the Lebanon region where these verses locate the Hiwwites was occupied by a large and important Khurrian element in the time of the Amarna tablets.<sup>355</sup> The Hiwwites are otherwise mentioned only in the stereotyped lists of the six or seven nations whom the Israelites were to dispossess,<sup>356</sup> according to the late nationalized accounts of the history of Israel. It may be that in favor of the Hiwwites who figure in these lists the Horites were removed from the Palestinian scene, so far as the Masoretic text was concerned,<sup>357</sup> and identified with the nomadic groups which occupied Edom preceding the Edomite conquest sometime in the first part of the thirteenth century B. C.<sup>358</sup> The influence of popular etymology

<sup>351a</sup> Meyer, *Die Israeliten und ihre Nachbarstämme*, pp. 328-32; Albright, "The Horites in Palestine," p. 22.

<sup>352</sup> ANNUAL XIII, p. 19. 23. 26. 28; Albright, "The Horites in Palestine," p. 17; JAOS 51, p. 65; Ginsberg and Maisler, "Semitised Hurrians in Syria and Palestine," JPOS XIV, p. 255.

<sup>353</sup> ANNUAL XIV, p. 82; Bulletin 58, p. 15.

<sup>354</sup> Meyer, *Die Israeliten und ihre Nachbarstämme*, pp. 330-2; ANNUAL XIII, pp. 29-31; Albright, "The Horites in Palestine," pp. 21-4; JAOS 51, pp. 65-6; JPOS, p. 260.

<sup>355</sup> ANNUAL XIII, pp. 29. 30; Albright, "The Horites in Palestine," p. 21; Meyer, *Die Israeliten und ihre Nachbarstämme*, p. 336, n. 1, suggests the reading "Horites and Amorites" for the corrupt names in Isa. 17, 9.

<sup>356</sup> Meyer, *Die Israeliten und ihre Nachbarstämme*, pp. 331, n. 1, 335-6; cf. Ex. 3, 8. 17; 13, 5; 23, 23. 28; 33, 2; 34, 11; Deut. 7, 1; 20, 17; Josh. 3, 10; 9, 1; 12, 8; 24, 11; Judges 3, 5; I Kings 9, 20.

<sup>357</sup> Meyer, *Die Israeliten und ihre Nachbarstämme*, pp. 331-2. 335-6.

<sup>358</sup> Albright, "The Horites in Palestine," pp. 23-4, pointing out that there is no room for Khurrians in Se'ir, suggests that in Deut. 2, 12. 22 and in Gen. 14, 6 the Hiwwites be read instead of the Horites, the Hiwwites being then "the semi-nomadic

may then have impelled the glossator, who included the references to the Horites among other passages of antiquarian interest in Deut. 2,<sup>359</sup> to connect them with legendary troglodytes in Edom.<sup>360</sup>

### *Edomite Pottery*

*Bronze Age:* A small number of EB III-MB I sherds from Kh. Qurn el-Kibsh (240) and el-'Aineh (221) are shown on Pl. 25A and 25B; nos. 1-13 are from Kh. Qurn el-Kibsh, and nos. 14-25 are from el-'Aineh. They represent some of the types of sherds found on early Bronze Age sites in Moab and Edom. Because of limitation of space, a fuller discussion than is possible here of the pottery collections made by the writer from numerous early Bronze Age sites in Moab and Edom must be reserved for another occasion. There is no difference between the early Bronze Age pottery of Moab and Edom and that of Palestine. Wavy ledge-handles were found,<sup>361</sup> nos. 1-3. 25 (whose folded edges are broken off), as well as degenerate wavy ledge-handles, which represent the final stage in their history,<sup>362</sup> nos. 4. 18. 20. Albright has shown that the wavy ledge-handle is found frequently, not only in Bronze Age sites south of Galilee in Western Palestine, but also south of the Ḥaurān in Eastern Palestine.<sup>363</sup> The province of the wavy ledge-handle extends also through Moab and Edom.<sup>364</sup> No. 19 shows a small knob on the side of a hand-made jar, which is continuously hand burnished on the outside surface with vertical lines of burnishing. Nos. 10. 11. 22. 24 are from large, flat-bottomed store-jars and deep bowls, respectively,<sup>365</sup> no. 24 being irregularly hand burnished with crisscross and vertical lines of burnishing on the inside surface over a bistre slip. Nos. 7. 8. 15 are from platters and bowls with inverted rims, with plain, reddish buff surfaces, or pattern burnished with parallel, slightly oblique lines of burnishing over a haematite slip on the inside surface,

Semitic tribe that occupied Mount Seir for the last centuries before the Edomite conquest, which took place not later than about 1250 B. C."; cf. Speiser, *ANNUAL* XIII, p. 30.

<sup>359</sup> Deut. 2, 10-12. 20-23. The hand of the same editor is visible in Gen. 14, 5. 6. Cf. Marti, *Deuteronomium* in *Die Heilige Schrift des Alten Testaments*, ed. 4, ad. loc.; Steuernagel, *Das Deuteronomium*, ad. loc.

<sup>360</sup> *ANNUAL* XIII, pp. 27. 30.

<sup>361</sup> *ANNUAL* XII, pl. 1, 7. 8; pl. 2, 16c; XIII, pp. 59-60; pl. 19, 1; pl. 20, 20-4.

<sup>362</sup> *Ib.*, pl. 3, 38-40; XIII, pl. 20, 1.

<sup>363</sup> *Ib.*, p. 3; XIII, p. 58, n. 4.

<sup>364</sup> *ANNUAL* XIV, p. 48; see above n. 295.

<sup>365</sup> *ANNUAL* XII, pl. 1, 9. 20-31; pl. 3, 41-2; pl. 4, 25; XIII, pl. 1, 4. 7-9; pl. 2; pl. 3, 5. 9. 14.

or continuously hand burnished over haematite slips on the inside and outside surfaces.<sup>366</sup> No. 13 is from a small profiled bowl, with a broad band of red wash on the inside buff surface extending from the lip of the rim, and a similar band on the shoulder of the outside buff surface. No. 14 belongs to a large coarse cooking pot, with a raised indented band below the rim on the outside surface.<sup>367</sup> A common type of decoration was a band of notches or incisions on the shoulder of the vessel,<sup>368</sup> cf. nos. 6. 21. Numerous sherds were decorated with horizontal, wavy, and vertical lines and bands of face-combing.<sup>369</sup> No. 9 is from a cooking pot with a grooved rim.<sup>370</sup> Several small loop handles were found, no. 12 with smooth oval section and with traces of red wash on the surface, and no. 5 with flat oval section and covered with a dark red haematite slip, continuously burnished with vertical lines of burnishing. The slip shows innumerable fine cracks resulting from the firing.<sup>371</sup> I have found both types of handles at Beth-Yerah and Tell el-Hammeh, where, however, the pottery is generally earlier.<sup>372</sup> Among the sherds most frequently found on early Bronze Age sites in Moab and Edom, and not shown on Pl. 25A and B, are plain rims of hole-mouth jars<sup>373</sup> and cooking pots.

*Early Iron Age:* It has been possible to identify Early Iron Age Edomite sites as such by means of the quantities of sherds found on them. In the following presentation only some of the outstanding types will be discussed, many examples being chosen in particular from Ṭawīlān, where the largest and most representative collection of Edomite ware was found. Examples of the spatulate bar-handle and the button-handle were found at various sites in Edom, as they had been found previously in Moab.<sup>374</sup> This type of handle, found frequently in Western Palestine in levels extending from the latter part of EI I down to the beginning of EI II,<sup>375</sup> is also at home in Syria and

<sup>366</sup> ANNUAL XII, p. 6, fig. 1; pl. 3, 18-20. 24. 25; XIII, pp. 61-2; pl. 20, 35-40.

<sup>367</sup> Cf. for general type, ANNUAL XII, p. 11; pl. 3, 26-31. There are no holes below the rim as in the Tell Beit Mirsim MB I type, but it cannot, nevertheless, be confused with the Tell Beit Mirsim MB II type, in which the holes are omitted, while the raised band becomes much more elegant.

<sup>368</sup> ANNUAL, VI, pp. 59-60; ANNUAL XII, p. 6, pl. 1, 26; pl. 2, 8; p. 10; XIII, p. 61, pl. 20, 5. 16. 17. 28-31; pl. 21, 1. 2. 9. 17.

<sup>369</sup> ANNUAL XII, pp. 5. 8. 9; pl. 1, 5. 14. 15; pl. 2, 1. 2; pl. 3, 9-13; pl. 5, 8-14; XIII, pl. 19, 1; pl. 21, 3-7; pl. 3, 1. 3. 6. 8.

<sup>370</sup> ANNUAL XII, p. 11.

<sup>371</sup> *Ib.*, p. 5.

<sup>372</sup> ANNUAL VI, p. 28; *Bulletin* 49, p. 23; *AJA* XXXIX: 3, article "Tell el-Hammeh."

<sup>373</sup> ANNUAL XII, p. 5, pl. 1, 1-4. 18. 19.

<sup>374</sup> ANNUAL XIV, p. 21, pl. 24: 16. 21.

<sup>375</sup> ANNUAL XIV, p. 21, n. 62.

Mesopotamia, as Albright has shown.<sup>376</sup> A number of spatulate and button-handles are shown on Pl. 26A. No. 8 is a bowl rim, with a typical EI I spatulate bar-handle, from Kh. Umm Ḥaṣḥas. Nos. 1, 4, 5-7 are examples of the button-handle, from Kh. Ṭawīlān. No. 4 (= Pl. 23:1) is from a thin walled bowl, covered with a coarse, creamy white slip on the outside and inside surfaces. The inside surface and the top of the rim are continuously hand burnished with contiguous, horizontal, somewhat irregular lines of chordal burnishing. On the surface of the rim is an additional form of decoration, often found on Edomite EI I pottery. It consists of a number of almost vertical wedges of dark brown paint, the lower edges of which extend over the lip of the rim onto the inside surface.<sup>377</sup> No. 5 is from a bowl with a wavy profile<sup>378</sup> and flaring rim. The core of gray, well levigated, somewhat porous clay, containing large white grits, is sandwiched between an inner and outer layer of reddish buff clay of similar texture. The inside surface is continuously hand-burnished with fine, horizontal lines of burnishing, over which are traces of spiral bands of paint. On the outside wet-smoothed, reddish-buff surface is a horizontal groove immediately below the button-handle, and another one above it meeting the button-handle in the center. The manner of baking Edomite Early Iron Age pottery resulted often in a ware with a gray core of well levigated, somewhat porous clay between buff surfaces. (This same technique of firing was adopted by the Nabataeans; their fine ware is very often similarly characterized by a gray core between buff inner and outer surfaces.) No. 7 shows the rim and button-handle of a thin walled bowl, with buff surfaces over a gray core, made of well levigated, porous clay. The outside surface is wet-smoothed. The inside surface and the top of the rim are horizontally line burnished,<sup>379</sup> with a horizontal band of dark brown paint on the upper and lower edges of the rim, respectively. No. 1 is from a coarser bowl with a similar profile, and a large, pinched button-handle. The inside surface is decorated with horizontal, wavering bands of hand burnishing; there are also traces of burnishing on the rim. The outside surface is wet-smoothed. No. 6 (= Pl. 23:3) is from a wavy profiled bowl with a button-handle, which is flattened out to form a knob extending from the top of the shoulder of the bowl.<sup>380</sup> There may have been

<sup>376</sup> ANNUAL XII, p. 73.

<sup>377</sup> ANNUAL XII, p. 65, pl. 30: 6.

<sup>378</sup> ANNUAL XII, p. 64, pl. 29: 13; p. 65, pl. 30: 19, 34-6; p. 70, pl. 47: 7; pl. 50: 5; pl. 51: 17; Sellers, *Beth-Zur*, p. 40, pl. VIII: 28; Grant, *ʿAin Shems* 1931, pl. XXXII: 7.

<sup>379</sup> ANNUAL XII, p. 68, pl. 27: 42.

<sup>380</sup> QDAP IV: 1-2, 1934, p. 22, no. 85; *ʿAin Shems* III, fig. 5: 3.



several similar knobs on the bowl.<sup>381</sup> The rim and inner surface of the bowl are continuously hand-burnished with contiguous, horizontal bands of burnishing. No. 2 shows a related form of knob handle from a bowl, found at Kh. 'Ayûn Mûsâ (238) in Moab. No. 3 (= Pl. 23:5), from Kh. Ḥamr Ifdân, is an excellent example of a button-handle on a bowl of clear EI I type with profiled rim. There are traces of a continuously burnished bistre slip on the top of the rim. The inside surface is too worn to determine if the slip extended over it also, as seems probable. The outside buff surface is wet-smoothed. Pl. 23:2 (= 27B:21), from Ṭawilân, shows the rim of a wavy profiled bowl of EI I, with a small pinched button-handle.<sup>382</sup> The inner surface and the top of the rim are hand burnished with horizontal, wavering bands of chordal burnishing. On the rim, over the lines of burnishing, is a horizontal band of dark brown paint, and parallel, vertical bands of the same color. The outer buff surface is wet-smoothed.

The distinctive type of Edomite painted decoration found on the rims mentioned above, Pl. 26A:4 (= 23:1), 27B:21 (= 23:2), occurs quite frequently, as evidenced by a number of such rims from Ṭawilân, shown on Pl. 27B. This type of decoration is common in Palestine in LB,<sup>383</sup> but it is also found in EI I.<sup>384</sup> The decoration usually consists of a number of parallel, vertical bars of dark brown or black paint, or of one or more horizontal bands of paint, and often of a combination of the two. The decoration consisting of parallel, horizontal bands of paint on the rim is similar to that on EI I Moabite sherds.<sup>385</sup> In Moab and in Edom this type of decoration seems to belong to EI I, to judge from the shapes of the vessels. Naturally stratigraphic excavations alone can determine the more exact dating of Moabite and Edomite pottery. Belonging to the same type of bowl with profiled rim as the one with the button-handle treated above, Pl. 26A:3, are the decorated rims Pl. 27B:18.19.22.24.27. No. 24 (= Pl. 23:6) is horizontally hand burnished on the inside with parallel, wavering bands of burnishing over a buff surface. On the rim are two parallel, horizontal bands of dark brown paint, separated by bands of creamy white wash, put on before firing. No. 18 (= Pl. 23:4) has two parallel, horizontal lines of dark brown paint on the

<sup>381</sup> ANNUAL XII, p. 73, pl. 24: 7-8.

<sup>382</sup> ANNUAL XII, p. 68, pl. 30: 31; pl. 51: 13; XIV, p. 21, pl. 24: 16. 21.

<sup>383</sup> ANNUAL XII, p. 47, pl. 19: 11. 18; pl. 20: 3; XIII, pl. 27: 4; Macalister, *Gezer* III, pl. XC: 8.

<sup>384</sup> QDAP IV: 1-2, 1934, p. 22, no. 77; p. 29, no. 153; Grant, *'Ain Shems* III, 1934, fig. 2: 11; fig. 5.

<sup>385</sup> ANNUAL XIV, p. 18, pl. 20: 17-19; p. 21, pl. 24: 19.

rim, separated by bands of white wash. No. 19 (= Pl. 23:8; 28:4) is from a wavy profiled bowl, with three parallel, horizontal bands of black paint on the inside, wet-smoothed surface. On the rim are three parallel, horizontal bands of black paint, crossed by parallel, vertical bars of a similar color. The outside buff surface is wet-smoothed. No. 22, from a similar bowl, with a small ridge immediately above the shoulder, has the same type of decoration on the rim. No. 27 (= Pl. 23:7), likewise from a profiled bowl with a small, sharp ridge at the base of the rim, has several horizontal lines of dark brown paint on the inside surface. The rim is covered with a continuously burnished, creamy white slip, over which horizontal and vertical bands of dark brown paint were placed.

The same type of decoration on bowl rims is seen on a number of thin walled bowls with slightly everted and inverted rims. No. 25 (= Pl. 23:9) has a single band of dark brown paint on the wet-smoothed outside surface.<sup>386</sup> There are traces of burnishing on the inside surface. The top of the rim is continuously hand burnished with contiguous, parallel lines of burnishing,<sup>387</sup> over which are vertical bars of dark brown paint. No. 23 (= Pl. 23:11) has a grayish white, discontinuously hand burnished slip on the rim over which are parallel, vertical bars of dark brown paint. Pl. 28B:24, from Kh. 'Eraq el-Janūbiyeh, belongs to a bowl with a similar profile. It has two parallel, horizontal bands of black paint on the wet-smoothed outside surface. There are traces of a band of black paint on the rim. No. 28 (= 23:10) is hand burnished on the inside surface with parallel, horizontal bands and lines of burnishing. The surface of the rim is continuously hand burnished with contiguous, horizontal lines of burnishing, with a horizontal band of dark brown paint in the center of the rim. The outside surface is wet-smoothed. Pl. 27A:11 from Ṭawilân belongs to a similarly profiled bowl. It is continuously hand burnished with parallel, contiguous bands of burnishing over a bistre slip on the outside and inside surfaces and on the rim, and with horizontal bands of black paint on the outside surface.<sup>388</sup> Pl. 28B:23, from Kh. el-Qrein, is from a small bowl, irregularly hand burnished on the inside surface with wavering, horizontal lines of burnishing.<sup>389</sup> On the rim are alternate, horizontal bands of white wash and black paint, with one horizontal band of red slip on the lower edge of the rim. Below the rim, on the outside wet-smoothed surface is a horizontal band of black paint. Pl. 27B:30

<sup>386</sup> ANNUAL XII, p. 63, pl. 28: 21.

<sup>387</sup> ANNUAL XIV, p. 18, n. 2.

<sup>388</sup> ANNUAL XII, p. 68, pl. 27: 41.

<sup>389</sup> *Ib.*, p. 68, pl. 27: 42; XIV, p. 17, pl. 20: 11.

(= 23:12) shows a bowl rim, which is continuously burnished with contiguous, horizontal lines of burnishing, over which are verticle bars of dark brown paint. Pl. 28A:7 (= 23:13), belonging to a similar type of bowl, also from Ṭawilân, has two parallel, horizontal bands of black paint on the outside, wet-smoothed brownish buff surface. On the inside surface are several horizontal bands of hand burnishing, with one horizontal line of black paint visible. On the rim are two horizontal bands of black paint, one along each edge of the rim, which seems originally to have been continuously line-burnished. Pl. 28A:11 (= 23:14) is horizontally hand burnished on the inside surface with parallel, wavering lines of burnishing over a buff surface. The rim is continuously hand burnished with horizontal lines of burnishing, over which at each edge is a horizontal band of dark brown paint, with also one vertical band visible. The outside surface is covered with a grayish white wash. Pl. 28A:12 (= 23:15) is from a small thin walled bowl, horizontally hand burnished on the inside surface and on the rim with wavering lines of burnishing. The outside buff surface is wet-smoothed. Pl. 27A:8 (= 23:16) has a grayish white wash on the outside surface. On the rim is a grayish white slip, continuously burnished, over which are three horizontal lines of black paint. Below the edge of the rim on the inside surface is a horizontal band of black paint; beneath it is a band of continuously burnished red slip, over which additional horizontal bands of black paint were placed. Pl. 28A:16 shows traces of horizontal line burnishing on the inside surface, over which two parallel, horizontal lines of black paint are visible. The rim is covered with a continuously burnished red slip, over which at each edge of the rim is a horizontal line of black paint. Below the rim on the outside, wet-smoothed buff surface is a horizontal band of black paint. The last mentioned sherds come from Ṭawilân.

Numerous examples were found of EI I wavy profiled bowls with flaring rims, decorated like the above mentioned sherds with combinations of bands of painting and burnishing. If not otherwise specified, the sherds mentioned come from Ṭawilân. Pl. 27B:26 (= 23:17) is from a small bowl with outflaring rim, on which are four parallel, horizontal bands of black paint. The lower band laps over to the top of the inside surface, which is continuously hand burnished with horizontal bands of burnishing. The outside surface is wet-smoothed.<sup>300</sup> Pl. 27B:20 is continuously hand burnished on the inside surface and on the rim with wavering bands of burnishing, there being also a broad, horizontal band of black paint on the lower edge of the rim and

<sup>300</sup> *Ib.*, p. 69, pl. 31: 38.

a narrow band on the upper edge. Pl. 28B:28, from Kh. Usdûr el-Leweimeh, is from a bowl with a flaring rim;<sup>391</sup> it is continuously chordal line-burnished on the inside surface and on the rim, over which are a number of almost vertical bars of black paint. Pl. 28B:20, from Kh. Usdûr el-Leweimeh, belongs to a similarly decorated bowl. Pl. 28B:26 (=23:18), from Kh. 'Eraq esh-Shemāliyyeh, is continuously burnished on the inside surface with contiguous, horizontal lines of chordal burnishing over a bistre slip. On the rim is a white slip, over which are three parallel, horizontal bands of dark brown paint, the top one overlapping the lip of the rim. Pl. 28A:15, from a somewhat similarly profiled bowl, shows a horizontal line of black paint on each edge of the rim, with traces of a similar line in the center of the rim. Two lines of black paint are visible on the inside buff surface, which is hand burnished with irregular, horizontal lines of chordal burnishing. Pl. 28A:3 (=23:19) is from a wavy profiled bowl with flaring rim. The inside surface of the rim is horizontally hand burnished with irregular, parallel bands and lines of burnishing. Traces of similar burnishing are visible on the inside surface of the bowl. The outside surface is wet-smoothed and is marked by two horizontal grooves. Pl. 27A:4, photographed upside down, is from a well-made profiled bowl of the EI I period. It is continuously burnished inside and outside with contiguous horizontal bands of burnishing over a bistre slip. In addition, on the inside surface of the rim are two vertical bars of black paint; there are also two horizontal bands of black paint on the outside surface of the rim. On the top shoulder of the bowl is another horizontal band of black paint, with traces of a horizontal band of white wash beneath it.

A number of characteristic Edomite painted decorations are visible on Pl. 27A, all of which are from Tawilân except nos. 2 and 3, which come, respectively from Kh. esh-Shedeiyid and Kh. en-Naḥās. Some of them have already been discussed above. One of the outstanding features of this painted pottery is the use of a checker or criss-cross trellis-work pattern, which occurs frequently, as we have seen, Pl. 27B:18-28.30, on the rims of EI I vessels. Vertical, horizontal, and oblique bands of paint form the trellis patterns. This type of decoration is common in Palestine in LB<sup>392</sup> and occurs there also in EI I.<sup>393</sup> The checker or trellis design is found frequently on Philistine vessels.<sup>394</sup> Only a few examples of it were found in Moab,<sup>395</sup> and there also

<sup>391</sup> *Ib.*, p. 68, pl. 23: 13; Sellers, *Beth-Zur*, pl. VII: 6.

<sup>392</sup> ANNUAL XII, p. 47, pl. 19: 6. 11. 18; XIII, pl. 26: 18. 19. 21; pl. 27: 4. 22.

<sup>393</sup> ANNUAL IV, pl. XXXI: 7; XII, pp. 48. 64-5. 73, pl. 24: 21. 22. 29. 41; pl. 30: 2. 4. 5; pl. 25: 19; pl. 50: 10.

<sup>394</sup> ANNUAL XII, p. 62.

<sup>395</sup> ANNUAL XIV, p. 20, pl. 23: 25.

on EI I pottery. All of this type of Edomite painted ware may be assigned to EI I. No. 3 (= 23:20) is from a large, coarse, flat-bottomed pot found at Kh. en-Nahâs.<sup>396</sup> It was picked up there several years ago by a party investigating the 'Arabah, consisting of Messrs. Horsfield and Head and Major Kirkbride. It belongs to EI I, as does most of the pottery from Kh. en-Nahâs, where nothing earlier was found. The outside surface of the vessel is covered with a polished, grayish white slip, over which is a checker pattern of lines of black paint. There are traces of this same pattern also on the worn collared rim of the vessel. The core of the vessel is dark gray in color, the baking process leaving a thin veneer of reddish buff clay on the surfaces. It is made of well levigated clay of porous texture with large grits. Pl. 23:21, from Mene'yyeh, shows a fragment of a crude flat base, characteristic of the pot from Kh. en-Nahâs. No. 1 has a continuously hand burnished sepia slip, over which is a crisscross pattern of black lines bordered by a horizontal band of black paint, beneath which the ends of two diagonal lines of black paint are visible. No. 14 has a polished, creamy white slip, with a checker pattern of dark brown lines over it. No. 7 has a similar pattern over a wet-smoothed buff surface. No. 6 has a crisscross trellis design over a wet-smoothed, buff surface, contained within a rectangle or square formed likewise by bands of dark brown paint.<sup>397</sup> No. 10 is from the wall of a crude vessel covered with a white slip. Over it is a broad, horizontal band of black paint, below which is a crude trellis pattern composed also of lines of black paint. No. 13 belongs to a similar type of crude vessel. It is covered with a coarse white slip, over which are parallel, horizontal bands of black paint, crossed by vertical bars of black paint. No. 5 is from a related type, with horizontal and diagonal bands of black paint over the wet-smoothed, buff surface. No. 2, photographed upside down, is from a jug made of fine, well levigated, grayish white clay, which is characteristic of much band-painted EI I ware from Palestine.<sup>398</sup> Over the polished surface are parallel, horizontal bands of dark brown paint, unequally spaced. Above the upper band there extend wedges of reddish brown paint, and from the lower band there extend vertical bands of black paint.

Horizontal bands of paint and burnishing are a frequent form of decoration on Edomite ware of types which belong for the most part to EI I and to the beginning of EI II. No. 15 is from the wall of a jar with parallel, horizontal bands of black paint over the wet-smoothed, light buff surface.<sup>399</sup> No. 16 is

<sup>396</sup> *Bulletin* 55, p. 7.

<sup>397</sup> *ANNUAL* XII, pl. 30: 2. 5.

<sup>398</sup> *ANNUAL* XIV, p. 21, pl. 23: 20. 26.

<sup>399</sup> *ANNUAL* XIV, p. 20, pl. 23: 3.

from a thin walled bowl with alternating horizontal bands of white wash and black paint. Contiguous to the upper band of black paint is a horizontal band of reddish-brown paint. Bands of paint alternating with bands of white wash form a type of decoration frequently employed in Moab in EI I.<sup>400</sup> No. 9, from the wall of a jar, is decorated with parallel horizontal bands of red slip, over one of which are two parallel horizontal bands of black paint, with several vertical and one broad diagonal band of black paint visible below them. This type of decoration, with bands of paint being placed over a band of slip, is also closely related to contemporary Moabite ware of the EI I period.<sup>401</sup> No. 17 (= 23:22) is the ring base of a large bowl with spiral bands of black paint over the white slip which covers the inside surface. This is a common type of Edomite ware and decoration, where spiral painting seems to take the place of spiral burnishing.<sup>402</sup> How far down into EI II this type of decoration may extend is impossible to say, but it can hardly go beyond the middle of EI II and probably not beyond the very first part of that period.<sup>403</sup>

Pl. 29A shows bases of various types from Ṭawilân. Nos. 8.13 are from bowls with concave disc bases, belonging probably to EI I. No. 10 is from the small, flat base of an amphora.<sup>404</sup> No. 11 is from the flat disc base of a small shallow bowl covered on the inside and outside with a continuously burnished, polished sienna slip; there are traces of spiral band painting on the inside. The wheel marks on the base are completely obliterated. No. 12 is from a similar type of bowl with polished base, from which the wheel marks have been smoothed away. No. 4 is the ring base of a large coarse bowl. Nos. 1-7 belong to bowls with comparatively high ring bases, which may belong also to EI II.<sup>405</sup> No. 9 is the flat concave base, with slightly bulging center, of a bowl with pronounced wheel marks.<sup>406</sup>

Sherds from band-painted and burnished Edomite ware, belonging for the most part to EI I, in addition to those types already treated, were frequently found. Among them were a number of profiled bowls with plain rims. Pl. 28B: 27 (= 24.1), found at Kh. el-Far'ah, is from a wavy profiled

<sup>400</sup> ANNUAL XIV, p. 15, pl. 22: 2. 3; p. 16, pl. 20: 4; pl. 22: 6; p. 19, pl. 22: 3. 16; p. 20, pl. 23: 11.

<sup>401</sup> ANNUAL XIV, p. 17, pl. 20: 10; p. 19, pl. 22: 12. 19; p. 20, pl. 23: 26.

<sup>402</sup> ANNUAL XII, p. 73; XIV, p. 20.

<sup>403</sup> ANNUAL XII, p. 59, fig. 10: 1. 7; pl. 26: 23-4; IV, p. 13, pl. 29: 8-14.

<sup>404</sup> ANNUAL XII, p. 59, pl. 26: 21.

<sup>405</sup> ANNUAL IV, pl. 29: 15-22.

<sup>406</sup> ANNUAL XII, p. 59, pl. 26: 27.

jug,<sup>407</sup> with broad bands of continuously burnished bistre slip on the outside surface and horizontal bands of black paint over them. There are also traces of a grooved decoration (?) on the outside surface. The lip of the rim and its inside surface are covered with burnished bands of bistre slip. Pl. 28B:29 (=24:3), from Kh. Daḥaḥah, belongs to a deep, wavy profiled bowl; it has horizontal bands of black paint over the brown, wet-smoothed surface.<sup>408</sup> Pl. 28A:1 (=24:2), from Ṭawilân, is horizontally hand burnished with parallel lines of burnishing on the inside of the rim over a bistre slip. The outside buff surface of the rim also shows traces of horizontal line burnishing; two parallel horizontal bands of black paint are visible, between which are clear traces of triangular patterns formed by diagonal lines of black paint. On the lip of the rim is a horizontal band of black paint. Pl. 28A:2, from Ṭawilân, belongs to a profiled jug. It is covered with a grayish white slip on the outside surface, which is horizontally hand-burnished with irregular bands and lines of burnishing which at first glance seem to be painting. The inside surface of the rim is similarly decorated. Pl. 24:4, from Kh. 'Eraq el-Janūbiyeh, belongs to a fine, wavy-profiled bowl. It is continuously hand burnished on the inside and outside with contiguous lines of burnishing over the light brown surface. Pl. 28A:6, from Ṭawilân, belongs to a similar bowl. It is horizontally hand burnished on the inside and outside surfaces with parallel, irregular lines of burnishing. On the outside surface are two parallel, horizontal bands of dark brown paint. Pl. 24:5, from Kh. Ḥamr Ifdân, belongs to a fine, wavy profiled bowl made of well levigated, light brown clay. It has a band of black paint on the outside surface just below the lip of the rim, with two parallel horizontal lines of black paint on the shoulder.<sup>409</sup> Pl. 27A:12 (=24:6), from Ṭawilân, belongs to a fine, small, wavy profiled bowl of EI I. It has a horizontal line of black paint on the lip of the rim and two parallel, horizontal lines of black paint on the outside, light brown surface, which seems originally to have been continuously line burnished. On the inside surface are several lines of parallel chordal burnishing. Pl. 24:7, from Ṭawilân, belongs to a similar type of small, wavy profiled bowl; it has buff, wet-smoothed surfaces, over a core of dark gray, finely levigated clay containing tiny white grits. Pl. 24:8, from Ṭawilân, is horizontally line burnished with fine, equidistant lines of hand burnishing on the outside surface and several horizontal lines of burnishing on the inside of the rim. Pl. 28A:8 (=24:9), from Ṭawilân, has a line of black paint on the lip of the rim and two parallel horizontal lines of black paint on the outside sur-

<sup>407</sup> ANNUAL XIV, pl. 20: 3.

<sup>408</sup> *Ib.*, p. 18, pl. 20: 15.

<sup>409</sup> *Ib.*, pl. 20: 5.

face of the rim, alternating with two horizontal lines of burnishing. It is almost exactly similar to a small jug with a profiled rim from Sâliyeh in Moab.<sup>410</sup> Pl. 28A: 14, from Ṭawilân, photographed upside down, is from a fine, thin walled bowl with profiled rim and is hand burnished on the outside and inside with parallel horizontal lines of burnishing.

A number of other fine, thin walled bowls and jugs belonging to EI I were found, similar to those discovered in Moab and related to contemporary ware from Palestine. Unless otherwise specified, they are from Ṭawilân. Pl. 28A: 10 (= 24: 10) is from the wall and rim of a small, thin walled bowl, horizontally hand burnished on the inside and outside surfaces. On the outside surface there are also horizontal bands of black paint, with traces of triangular patterns of black paint. Pl. 28A: 18 (= 24: 11) is horizontally hand burnished on the inside and outside surfaces, with parallel horizontal bands of black paint on both surfaces and a band of black paint on the rim, which tapers to a point.<sup>411</sup> Pl. 28B: 21, from Kh. 'Eraq esh-Shemâliyeh, belongs to the wall and rim of a similar bowl. Below the rim on the buff outside surface is a broad horizontal band of black paint which extends over the lip of the rim. On the inside surface, below the lip of the rim, is a band of red wash bordered by a horizontal line of black paint, which is followed alternately by a band of white wash and a band of red wash. Pl. 28B: 19, from Kh. el-Far'ah, with reddish brown, wet-smoothed inner and outer surfaces, is decorated with two parallel horizontal bands of black paint on the outside surface, and four horizontal bands of black paint are visible on the inside surface. These bands of paint take the place of spiral burnishing.<sup>412</sup> Pl. 24: 12 is from a small, shallow, coarse bowl. It has a buff, wet-smoothed outside surface and is hand burnished with irregular, horizontal lines of chordal burnishing on the inside surface.<sup>413</sup> Pl. 28A: 17 is continuously hand burnished on the inside surface and the rim with parallel, horizontal, contiguous bands of burnishing over a bistre slip. On the lip of the rim are two parallel horizontal lines of black paint, with one band of black paint on the inside surface.

Pl. 24: 13, from Kh. Ḥamr Ifdân, belongs to an EI I thin walled, unprofiled saucer made of grayish white clay containing black grits. There are traces of continuous, spiral hand burnishing on the inside surface, with two parallel concentric bands of black paint below the rim. The outside surface

<sup>410</sup> *Ib.*, p. 18, pl. 20: 17; pl. 24: 11.

<sup>411</sup> *ANNUAL XIV*, p. 17, pl. 20: 10. 12. 13; *IV*, pl. XXVI: 3; pl. XXVII: 25; *Sellers, Beth-Zur*, pl. VII: 7; *ANNUAL XII*, p. 58, pl. 26: 3-9; pl. 51: 14-16; *QDAP 1934*, p. 21, nos. 69-73.

<sup>412</sup> *ANNUAL XII*, p. 73; *XIV*, p. 20.

<sup>413</sup> *ANNUAL XIV*, p. 17, pl. 20: 11; *IV*, p. XXVI: 3.



is wet-smoothed.<sup>414</sup> Pl. 28B: 22, from Kh. Hamr Ifdân, belongs to a flat plate with ring base, of a type frequently found at various Edomite sites. On the top surface of the plate are spiral bands of black paint, which evidently take the place of ring burnishing. Pl. 28B: 25 is from the collared rim of a fine bowl, horizontally wheel burnished on the inside and outside surfaces with parallel horizontal lines of burnishing over a red slip.<sup>415</sup> Pl. 28A: 9 (= 24: 14) is part of the neck and colored rim of a jug with light gray, wet-smoothed outside surface. On the lip of the rim is a broad horizontal band of black paint, with two parallel horizontal lines of black paint on the outside surface of the rim.<sup>416</sup> Pl. 28A: 13 is from a coarse shallow bowl with irregular, more or less horizontal bands of burnishing on the inside surface. Pl. 26A: 12 (= 24: 15) is from a shallow bowl with a scalloped rim. The outside surface of the bowl and the rim are covered with a white wash; the inside surface shows traces of irregular horizontal hand burnishing. Pl. 26A: 9 is from the same type of shallow bowl with scalloped rim. Pl. 26A: 11 (= 24: 16) is from a slightly carinated bowl with scalloped rim. The inside surface and the rim are covered with a red slip, hand burnished with parallel horizontal, wavering bands of burnishing. On the rim, over the lines of burnishing, a streak of black paint is visible. The outside surface of the bowl and the outside edge of the rim are covered with a white slip, which shows traces of having been horizontally line burnished with parallel lines of burnishing. Below the rim on the outside surface is a broad horizontal band of black paint, with a narrow wavy band of black paint immediately beneath it. This bowl too is to be assigned to EI I. Pl. 26A: 10 (= 24: 19) is from a small bowl with buff surface and scalloped rim. There are two parallel horizontal grooves on the top of the rim and a broad band of black paint below the outside edge of the rim. These vessels with scalloped rims are probably to be assigned to EI I, with the possibility of extension downward to the very beginning of EI II.

Some of the finest decorations were found on fragile vessels, of which, because of their very fragility, only small fragments were found. Among them are a number of sherds from small, thin walled jugs, shown on Pl. 28B: 30-33. Nos. 30 and 31 are semi-continuously hand burnished on the outside surface over a bistre slip, over which, in addition, parallel horizontal lines of black paint were placed. Nos. 32 and 33 were originally continuously hand burnished on the outside surface over a bistre slip, over which also were

<sup>414</sup> ANNUAL XII, p. 63, pl. 28: 2.

<sup>415</sup> *Ib.*, p. 60, pl. 29: 8.

<sup>416</sup> ANNUAL XIV, p. 16, pl. 20: 8; pl. 22: 4. 6.

parallel horizontal lines of black paint. Pl. 27B: 29, photographed upside down, is from a thin walled EI I lentoid flask.<sup>417</sup> There is a concentric band of burnished red slip on the outside surface. Beneath it is what seems originally to have been a band of white wash, bordered on each side by a line of black paint which is followed by a number of bands of line-burnished red slip so worn as to reveal the individual lines of burnishing. Pl. 28A: 5 is from a small, delicate saucer made of finely levigated, reddish-buff clay with tiny white grits. The outside surface is continuously burnished with contiguous horizontal bands of burnishing. The inside surface is discontinuously hand burnished with irregular, crisscross lines of burnishing, over which two parallel, concentric lines of black paint are visible. This fragment is particularly interesting because of the close resemblance of much delicate Nabataean pottery to it, particularly of the plain types of Nabataean ware made of finely levigated, reddish-buff clay and carefully wet-smoothed and highly polished on the inside and outside surfaces.<sup>418</sup> With regard to Edomite painted decorations, which belong for the most part to EI I, it may be said in general, that they form a class of their own which can be identified as Edomite. Edomite decorated ware is closely related to Moabite painted and burnished ware, yet there is a sufficient number of dissimilarities to enable one to differentiate between them.

Numerous fragments of coarse vessels were found, belonging to storage jars, cooking pots, and related types, similar to types found in Moab and Palestine. Some of the coarser types of pottery were, as we have seen, also decorated with painted designs, similar to those characteristic of the finer types.<sup>419</sup> Pl. 24: 17 is from a hole-mouth jar with thickened rim; for a similar type of rim cf. Pl. 26: 16 from Umm el-Biyārah. On the outside edge and side of the rim is a broad horizontal band of black paint, with one vertical bar of black paint across the rim.<sup>420</sup> Below the rim on the outside surface is a broad horizontal band of black paint with semi-circular blobs of black paint on its upper edge. This type of decoration could belong to EI I, although the form of the rim indicates that it might belong to EI II.<sup>421</sup>

Pl. 29B: 18 (= 24: 18) is from a large bowl with thickened rim and a loop handle with incipient ribbing. Nowhere in all of Edom or Moab did we find a single ribbed loop handle with two ribs running lengthwise of the handle. This ribbing is characteristic of EI II handles in Palestine, particularly of the royal stamped jar handles.<sup>422</sup> The EI II ribbed loop handles were absent

<sup>417</sup> *Ib.*, p. 19.

<sup>419</sup> Cf. Pl. 27: 20-22.

<sup>418</sup> *Ib.*, p. 75.

<sup>421</sup> Sellers, *Beth-Zur*, p. 42, pl. IX: 16.

<sup>420</sup> Cf. Pl. 27: 5. 10. 13.

<sup>422</sup> ANNUAL XII, p. 80, pl. 40: 3-5; IV, p. 23, pl. 30: 8-14.

also from Moab. It is noteworthy in this connection that very few sherds were found either in Edom or Moab with the spiral wheel burnishing characteristic of much EI II pottery in Palestine.<sup>423</sup> There are, however, other types of pottery which belong to EI II. Among them may be listed especially, because of their frequent appearance, hole-mouth jars and jugs with plain and ribbed rims, and large bowls.<sup>424</sup> Pl. 24: 22, 23 (= 26B: 14) are from hole-mouth jars with ribbed rims and rounded bottoms; cf. Pl. 26B: 13, 15. Pl. 26B: 17 is from a hole-mouth jar with a plain rim.

Numerous rims from plain bowls and cooking pots with oval-section loop handles attached to them were found. Pl. 29B: 15, 23 show handles of large bowls with plain rims.<sup>425</sup> Pl. 29B: 14 is from a large bowl with a flat topped, slightly inverted and everted rim.<sup>426</sup> A common type of sherds found in Moab and Edom belongs to EI II cooking pots with elaborately profiled or rilled rims and loop handles with oval section. Most of them are made of dark gray, fairly well levigated clay containing fine grits. This type of cooking pot makes its appearance in EI I in Palestine.<sup>427</sup> It is most common, however, in EI II.<sup>428</sup> Pl. 29B: 16, 17, 20, Pl. 24: 20-22, and Pl. 26B: 18, 19 are from EI II cooking pots. The profiled jug rims with loop handles, Pl. 24: 27, 28 (= 29B: 19, 21) may well belong to EI I.<sup>429</sup> The profiled jug rims, Pl. 24: 25, 26, the latter from Kh. Hamr Ifdân, may perhaps also be assigned to EI I, although to judge from their texture they may belong to the EI II type of profiled rim.<sup>430</sup> Pl. 29B: 22 is from the wall and handle of a decanter with buff surface.

Several fragments of Astarte figurines were found, one at Qasr ed-Deir and another at Rujm Râs el-Ḥâlâ being in too poor shape either to draw or photograph. To judge from their texture, they seem to be EI I in origin. Several other interesting EI figurine fragments are shown on Pl. 30A. No. 1, from Rujm Râs el-Ḥâlâ, shows a hand clutching a cone-shaped object. No. 3, from the same place, is the head of a small animal figurine with bulging eyes and small ears. The mouth, represented by a slit, is not visible on the photograph. No. 2, from Ṭawilân, looks like a phallus.

<sup>423</sup> ANNUAL XII, pp. 68, 85-6.

<sup>424</sup> ANNUAL XII, p. 79, pl. 52; *Harvard Excavation at Samaria I*, p. 284, fig. 159: 2.

<sup>425</sup> ANNUAL XII, pl. 60: 2, 5.

<sup>426</sup> ANNUAL IV, p. 12, pl. XXVII: 30.

<sup>427</sup> ANNUAL XII, p. 67, pl. 27: 10, 8, 13; p. 69, pl. 27: 50.

<sup>428</sup> This type at Tell Beit Mirsim belongs for the most part to the latter part of EI II, ANNUAL XII, p. 81, pl. 35; pl. 56; p. 88, pl. 40: 2.

<sup>429</sup> ANNUAL IV, pl. XXVIII: 3, 4, 11; XIV, pl. 21: 18.

<sup>430</sup> ANNUAL XIV, pl. 20: 20.

Because of limitations of space we shall have to conclude here our remarks on the pottery of the Early Iron Age sites in Edom. There is a general similarity between the pottery of Edom and that of Palestine and Moab. Like Moabite pottery, however, the Edomite pottery, particularly because of its distinctive types of decoration, must be placed in a separate class of its own. It testifies to the presence of a highly developed civilization, whose craftsmen possessed considerable artistic skill. The Edomite pottery extends throughout the entire Early Iron Age. The main occupational history of Edom, however, to judge from the pottery finds, lasted from the beginning of EI I down to about the middle of EI II, that is, from the first part of the thirteenth century down into the eighth century B. C. From about the middle of EI II on, Edom entered upon a time of rapid decline and disintegration which came to an end with the close of the period, so far as the ceramic data indicate.

### *Conclusions.*

As a result of these explorations, a number of conclusions may be briefly summed up:

I. Edom and Moab were occupied simultaneously, their histories running parallel courses. Recurrent phases of extensive settlement belie the theory made popular by Ellsworth Huntington<sup>431</sup> of an increasing diminution of rainfall and corresponding dessication in Arabia<sup>432</sup> and related parts of the Near East. The abandonment and reoccupation of entire countries such as Moab and Edom cannot be explained by popular theories of precipitation cycles rendering human habitation in these areas progressively impossible. Although all the variables which make for the development and disappearance of populations cannot be established for Moab and Edom, the explanation both for the periods of intensive settlement and for those of extended abandonment of these countries is to be found rather in strictly human, and particularly in political and economic factors than in climatic changes. Increasingly large areas in southern Transjordan are being occupied by a sedentary population today because of the newly established public security and improved economic conditions there. The Negeb of Palestine, for instance, could be made as habitable today as it was in the Byzantine period<sup>433</sup>

<sup>431</sup> *Palestine and its Transformation*; "Climatic Pulsations," in *Geografiska Annaler*, 1935, pp. 579-590.

<sup>432</sup> Montgomery, *Arabia and the Bible*, p. 92; see above n. 43.

<sup>433</sup> Cf. Olmstead's review of Huntington, *Palestine and its Transformation*, in *Bulletin of the American Geographical Society*, 1912, pp. 432-40.

were it to be settled by a population gifted with the courage, ability, and determination of its former inhabitants, other economic and political conditions being approximately equal. In a word, wherever in Moab and Edom and in southern Palestine, i. e., in the areas which we have examined, sedentary populations have existed during various periods in the last four millennia, usually on or near the very same sites, it is still possible for cities and villages to spring up again. The climatic conditions have apparently changed little if at all.

II. An advanced civilization flourished in Edom from the twenty-third to the eighteenth century B. C., when it completely disappeared. Its presence further authenticates the general validity of the historical background of Gen. 14.<sup>434</sup> The main trade-route used in this period can be traced now practically throughout the entire length of Eastern Palestine, turning at Feinân westward to Sinai. Its line marks the direction of the main route of trade in every subsequent period of settlement, however distant from each other some of the successive periods were. It is known that Sinuhe visited ancient Kedem, east of the Jordan, at the beginning of the twentieth century B. C., but, besides the veiled references in Gen. 14, there are no other literary records dealing with the occupation of Eastern Palestine in this period. There is no discernible difference between the early Bronze Age pottery of Moab and Edom and that of Western Palestine. Were the Hyksos responsible for the destruction of this early Bronze Age civilization?

III. Between the eighteenth and thirteenth centuries B. C. there is a complete gap in the history of settled communities in all of Edom. Not a site was discovered nor a sherd found which could be ascribed to Middle Bronze II or to Late Bronze. The same gap was established for the history of Moab, when likewise the land was peopled only by roaming Bedouin. It is significant that neither the Egyptian lists of towns nor the Tell el-Amarna letters refer to this period in Eastern Palestine. Edom and Se'ir are first mentioned in the records of Merneptah and Ramses III. There are no traces of Horites in either the hill-country of Edom or in the 'Arabah, or in southernmost Palestine.

IV. There was a highly developed Edomite civilization, which flourished especially between the thirteenth and the eighth centuries B. C. From the eighth century on there was a rapid disintegration of the power of Edom. The long period of warfare with Judah, which was the victor from the time of David to Jehoshaphat and from the time of Amaziah to Ahaz, and the ex-

<sup>434</sup> Cf. ANNUAL XIV, pp. 81-3.

tended period of aggression by Assyrian and Babylonian armies against Edom and Arabia, in addition to whatever events may have transpired during the very first part of the rise of the Persians to power,<sup>435</sup> resulted in the weakening and destruction of the Edomite state. The Nabataeans, who built a kingdom partly on its remains, evidently encountered little or no resistance. During their heyday, however, the Edomites could compare favorably with any of their neighbors. Their pottery, while related to the Moabite ware, requires a classification of its own. It is well made and artistically and distinctively decorated. They engaged extensively not only in trade and agriculture but also in industry, which included mining and smelting the ores in the 'Arabah. Their boundaries were well protected with a system of border fortresses in sight of each other, guarding rich agricultural settlements in the interior, some of which evidently did not rely on any fortifications of their own for protection. No records have as yet been discovered, but they will certainly be found if excavations are ever undertaken. The civilization of Esau was certainly not inferior to that of Jacob.

During the Early Iron Age the 'Arabah, with its mineral deposits and its access to the Red Sea traffic and the trade of Arabia, played a most important part in the economic life of Judah and Edom. The two countries fought bitterly for the possession of this rich and strategically placed stretch of land. Its wealth and the lure of the trade from Arabia explain the *Drang* towards the southeast which characterized the foreign policy of the United Kingdom and then of Judah. In the early Bronze Age also and in the Nabataean and Roman periods the 'Arabah provided an important avenue for caravan traffic, although its mines were exploited chiefly during the Early Iron Age.

V. From about the end of EI II in general, but in many sites from about the eighth century on, there is another gap in the history of settled communities in Edom. It lasted till the appearance of the Nabataeans.<sup>436</sup> By the fourth century B. C. they had definitely swung themselves into power by gaining control of the trade-routes leading northward from Arabia. The Nabataeans adopted the methods of organization and defence which the Edomites had developed, and built many new settlements and fortresses and watch-towers of their own. The Nabataeans succumbed to the Romans, disappearing quickly after their conquest by Trajan in 106 A. D. Nabataean pottery, how-

<sup>435</sup> *The Geographical Journal*, Nov. 1930, pp. 377-8; von Bulmerincq, *Maleachi* I, pp. 133-6; II, pp. 22-3.

<sup>436</sup> *ANNUAL* XIV, p. 83; Diodorus Siculus, *Bibliotheca Historica*, XIX, 94-7, ed. Dindorf.

ever, which may date back to the second century B. C., continued in use in the second century A. D. for some time after the Roman conquest. The Nabataean occupation of Edom and Moab was greater than any that preceded or followed it. Numerous Roman, Byzantine, and mediaeval Arabic settlements testify to the occupation of Edom in these later periods. Primarily because of political conditions, large sections of Edom have remained unoccupied from the mediaeval Arabic period or even from Nabataean-Roman times down to this day.

Cincinnati, Ohio,

July 9, 1935.

## ADDENDUM

Albrecht Alt's *Aus der 'Arabah* II-IV, ZDPV 1935, pp. 1-78, which we shall refer to as AA II, came to hand too late to be incorporated in the body of this article, though references to it have been added to the footnotes. The sub-title, *Römische Kastelle und Strassen*, indicates the special interest of Alt's article. We are grateful to Alt for dealing particularly with the Roman occupation of the 'Arabah, to which we have referred in the body of our paper. It has been our particular effort, however, to show that there was an intensive Nabataean occupation of the 'Arabah prior to the Roman, and that, certainly so far as the pottery remains are concerned, it left a more indelible impression than did the subsequent Roman occupation. When the Romans took over the Nabataean settlements and stations in the 'Arabah, they evidently continued, as has been pointed out,<sup>437</sup> to make use of pottery manufactured by Nabataean craftsmen. Only thus can the practically exclusive presence of Nabataean pottery be explained at such places as et-Telâḥ (Toloana) and el-Ḥoṣb (Eiseiba), for example.<sup>438</sup> Future excavations may be able to determine how long Nabataean pottery continued to be used in sites taken over by the Romans from the Nabataeans. Our main effort has not been to determine the dates of buildings by the sherds found beside them on the surface of the ground,<sup>439</sup> but rather by utilizing the sherds to fix the period or periods of occupation of a site. In the case of the Roman occupation of the 'Arabah, the lack of Roman pottery does not indicate the absence of Roman occupation, either because Nabataean ware remained in use, or, possibly, because Roman sherds have not worked their way to the surface.<sup>440</sup> A particular building on a site may or may not belong to the same period as the predominant or even sole type of pottery found there, but the pottery is certainly indicative of the origin, nature, and duration of the occupation of the site, and may be directly related to the buildings found on it. The literary evidence which Alt and others have adduced to determine the Roman occupation of the 'Arabah is indisputable, but his tendency to fit the origin of extant buildings at various

<sup>437</sup> See above, pp. 13-14.

<sup>438</sup> Alt, AA II, p. 14, admits this possibility.

<sup>439</sup> Alt mistakenly ascribes to me an absolute "Grundsatz der Datierung von Bauwerken nach der Keramik ab," AA II, p. 14, n. 1, which I must disclaim because it is always a relative matter. Using sherds to date a site is certainly more satisfactory scientifically than to date a site by the problematic nature of an almost completely ruined building, as Alt frequently does.

<sup>440</sup> Cf. AA II, p. 13.



sites in the 'Arabah into a history of its occupation by the Romans must be guarded against. For each of the caravanserais and small fortresses in the 'Arabah which he considers <sup>441</sup> Alt claims a Roman origin. Are we then to believe that none of the original Nabataean buildings remained, which must have existed on the numerous sites fairly covered with Nabataean pottery, and that they were all replaced with new Roman structures? Must not the possibility be seriously considered that the Romans took over and perhaps rebuilt many buildings originally erected by the Nabataeans? <sup>442</sup> It is important to emphasize that there is not a site in the 'Arabah, among those we have examined, which had not been Nabataean before it became Roman.<sup>443</sup> The Nabataean occupation of the 'Arabah seems indeed to have been much more intensive than the Roman.

<sup>441</sup> Alt, AA II, pp. 13, 17, basing himself on Frank, AA I, p. 218, Pl. 16, even regards the great enclosure at Kh. en-Naḥās, measuring 76 metres square, with walls two metres thick, as Roman in origin. The great enclosure, while possibly later than some of the small ruins around and inside it, belongs in all probability to the EI I period. It served the same purposes as the great enclosure at Mene'lyyeh, see above pp. 28, 44, being both a concentration camp and a smelting center. At both Kh. en-Naḥās and Mene'lyyeh there were but small Nabataean settlements, and no traces whatsoever of Roman occupation; both sites, to judge from the sherds, were intensively occupied only in the EI I-II period. The walls of the large enclosure at Kh. en-Naḥās are certainly entirely unlike those of any other possible Roman structure in the 'Arabah. That they are somewhat differently aligned than the walls of the small buildings around and inside the enclosure (which indeed are but heaps of ruins whose walls can hardly be traced, if at all) may indicate different periods of construction in the EI period, but affords no valid reason to assign these walls to the period of the Roman occupation of the 'Arabah.

<sup>442</sup> Cf. Alt, AA II, p. 15.

<sup>443</sup> Cf. *Bulletin* 59, p. 12.

# LIST OF ABBREVIATIONS.

AA	<i>Aus der 'Araba</i> I, ZDPV 57, 1934, pp. 191-280.
AA II	<i>Aus der 'Araba</i> II-IV, ZDPV 58, 1935, pp. 1-78.
ANNUAL	<i>Annual of the American Schools of Oriental Research.</i>
AJA	<i>American Journal of Archaeology.</i>
APB	Albright, <i>Archaeology of Palestine and the Bible.</i>
Bulletin	<i>Bulletin of the American Schools of Oriental Research.</i>
JAOS	<i>Journal of the American Oriental Society.</i>
JPOS	<i>Journal of the Palestine Oriental Society.</i>
M	Musil, <i>Arabia Petraea</i> I, Moab.
MA	Jaussen and Savignac, <i>Mission archéologique en Arabie.</i>
ME	Musil, <i>Arabia Petraea</i> II, Edom.
MVG	<i>Mitteilungen der Vorderasiatischen Gesellschaft.</i>
PA	Brünnow and Domaszewski, <i>Die Provincia Arabia.</i>
PEFA	<i>Palestine Exploration Fund Annual.</i>
PEFQS	<i>Palestine Exploration Fund Quarterly Statement.</i>
QDAP	<i>Quarterly of the Department of Antiquities of Palestine.</i>
RB	<i>Revue Biblique.</i>
ZDPV	<i>Zeitschrift des Deutschen Palästina-Vereins.</i>
I	<i>Explorations in Eastern Palestine, I.</i>
II	<i>Explorations in Eastern Palestine, II.</i>

## LIST OF SITES VISITED CORRESPONDING TO NUMBERS ON MAP.

- |                         |                            |
|-------------------------|----------------------------|
| 1. Umm el-'Aqâreb.      | 36. Kh. el-Qaraneh.        |
| 2. Rujm en-Numeirah.    | 37. Kh. et-Telâjeh.        |
| 3. eş-Şâfî.             | 38. Kh. en-Naşârâ.         |
| 4. Qaşr el-Feifeh.      | 39. Kh. Abû el-Lesal.      |
| 5. Rujm Khaneizîr.      | 40. Kh. el-'Aqeïgeh.       |
| 6. et-Telâh.            | 41. el-Me'eiqal.           |
| 6a. Ruin.               | 42. Kh. Da'ûq.             |
| 7. el-Ḥoşb.             | 43. Kh. el-Moreighah.      |
| 8. Rujm Ḥamr Ifdân.     | 44. Kh. Abû Naşûr.         |
| 9. Kh. Ḥamr Ifdân.      | 45. 'Ain Jemmam.           |
| 10. Kh. en-Naḥâs.       | 46. Kh. eş-Şarâh.          |
| 11. Kh. el-Gheweibeh.   | 47. 'Ain el-Qanah.         |
| 12. Kh. el-Jâriyeh.     | 48. Rujm 'Ain el-Qanah.    |
| 13. Kh. Nqeib Asîmer.   | 49. Rujm Bîr Turkî.        |
| 14. Feinân.             | 50. Kh. Bîr Turkî.         |
| 15. Bîr Madhkûr.        | 51. Kh. Umm Ḥamât.         |
| 16. Kh. et-Taiyibeh.    | 52. Kh. Umm el-Ḥoweitât.   |
| 17. 'Ain Gharandel.     | 53. Kh. Ghanâm.            |
| 18. Ḥafriyat Ghadyân.   | 54. Kh. Tāsân.             |
| 19. Ghadyân.            | 55. Kh. Umm ed-Diab.       |
| 20. Mene'iyyeh.         | 56. Kh. Kheyeiyîṭ.         |
| 21. 'Ain Defiyyeh.      | 57. Kh. 'Atiyyeh.          |
| 22. 'Aqabah.            | 58. Kh. el-'Alâweh.        |
| 23. el-Breidsh.         | 59. Kh. Umm es-Seleileh.   |
| 24. Aila.               | 60. Kh. et-Taiyineh.       |
| 25. Mrashshash.         | 61. Kh. Umm Baradîyeh.     |
| 26. Jebel Ramm.         | 62. Kh. Abû Şaltûl.        |
| 27. el-Khaz 'Alî.       | 63. Kh. Ghânâm.            |
| 28. Rekhemtein.         | 64. Kh. Salîm.             |
| 29. Kuweirah.           | 65. Kh. Sweilîm.           |
| 30. el-Menjir.          | 66. Bîr Harâbat ed-Dakhan. |
| 31. Kh. Neqb esh-Shtâr. | 67. Kh. Harâbat ed-Dakhan. |
| 32. Kh. el-Fuweileh.    | 68. Kh. Nabhân.            |
| 33. Kh. el-Fuweileh.    | 69. Kh. Burqah.            |
| 34. Kh. esh-Shedeiyid.  | 70. Kh. Naşâr.             |
| 35. Kh. Ḥedeiyib.       | 71. Kh. Khmeis.            |

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|----------------------------------|---------------------------------|
| 72. Kh. Umm Semaqah.             | 111. Kh. Şarâḥ.                 |
| 73. Kh. el-Qrein.                | 112. 'Ain Ḥejîn.                |
| 74. Ruĵm el-Qrein.               | 113. Kh. Daḥaḥah.               |
| 75. Kh. Dôr.                     | 114. Kh. el-Minyeh.             |
| 76. Kh. Umm Râs.                 | 115. 'Ain el-'Âliyah.           |
| 77. Kh. Umm Ḥaşḥas.              | 116. Kh. Şuwâkh.                |
| 78. Kh. Sherfân.                 | 117. 'Ain el-Far'ah.            |
| 79. Kh. Ḥamdân.                  | 118. Kh. el-Far'ah.             |
| 80. Kh. Sweimreh.                | 119. Kh. Brâk.                  |
| 81. Şadaqah.                     | 120. Kh. Emûn.                  |
| 82. Ruĵm eş-Şadaqah.             | 121. Kh. Mu'allaq.              |
| 83. Kh. Mufeseh.                 | 122. Kh. Debeil.                |
| 84. Kh. el-Megheitaḥ.            | 123. Kh. Bedeiweh.              |
| 85. 'Ain Jeweizâ esh-Sherqiyyeh. | 124. 'Ain eṭ-Ṭaiyibeh.          |
| 86. 'Ain Jeweizâ el-Gharbiyyeh.  | 125. Kh. Debat.                 |
| 87. 'Ain Jenâb esh-Shemsh.       | 126. Kh. el-Ḥebeis.             |
| 88. Kh. Ka'akah.                 | 126a. Nabataean cistern.        |
| 89. Kh. er-Reseis.               | 127. Kh. en-Nefei'ât.           |
| 90. Kh. Delâghah.                | 128. Kh. eṭ-Tibn.               |
| 91. Kh. Ismân.                   | 129. eş-Şabrah.                 |
| 92. 'Ain ed-Dilbeh.              | 130. Ṭawîlân.                   |
| 93. 'Ain 'Aweineh.               | 131. 'Ain el-Qraiyyeh.          |
| 94. 'Ain Batrah.                 | 132. 'Ain Abû Hârûn.            |
| 95. Kh. er-Râjef.                | 133. Kh. Debdebah.              |
| 96. Kh. Qabr Shâker.             | 134. Bîr Beidâ.                 |
| 97. Kh. Meḥeilleh.               | 135. Kh. Umm Qeṣeir.            |
| 98. Kh. Ḥeidân.                  | 136. Siq el-Bâred.              |
| 99. Kh. el-Beq'ah.               | 137. Kh. en-Neq'ah.             |
| 100. Kh. el-Başṭah.              | 138. Kh. Ḥezeir.                |
| 101. Kh. el-Ail.                 | 139. Kh. el-Hîsheh.             |
| 102. 'Ain el-'Asheirah.          | 140. Kh. 'Eraq el-Janûbiyyeh.   |
| 103. 'Ain Abû 'Aṭâm.             | 141. Kh. 'Eraq esh-Shemâliyyeh. |
| 104. Kh. el-Fardakh.             | 142. Kh. Jeneineh.              |
| 105. Udhruh.                     | 143. 'Ain el-Ḥewâleh.           |
| 106. Kh. eṭ-Ṭemei'ah.            | 144. Kh. el-Ḥewâleh.            |
| 107. Kh. el-Jorbâ.               | 145. Kh. el-Meqdes.             |
| 108. Kh. el-Meḥalleh.            | 146. Kh. el-Khôr.               |
| 109. 'Ain Gheidân.               | 147. Bîr ed-Dabârah.            |
| 110. Kh. Sabḥiyyeh.              | 148. Râs el-Ḥewârî.             |

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|-----------------------------|-----------------------|
| 149. Kh. el-Mikhwan.        | 186. Kh. Nuṣṣrānīyeh. |
| 150. Kh. eş-Şefā.           | 187. Kh. Sarāb.       |
| 151. 'Ain el-Ḥai.           | 188. Kh. Maqṭah.      |
| 152. 'Ain Şihān.            | 189. Kh. Jeleil.      |
| 153. 'Ain Sa'īd.            | 190. Kh. el-Qaṣr.     |
| 154. Umm el-'Amad.          | 191. Kh. el-Kôlah.    |
| 155. Kh. Ṭur eṭ-Ṭawârah.    | 192. Kh. Kheirân.     |
| 156. Kh. ez-Zebeiriyyeh.    | 193. Kh. Khâşdeh.     |
| 157. Kh. Nuṣṣrānīyeh.       | 194. Kh. Sherâreh.    |
| 157. Kh. Nuṣṣrānīyeh.       | 195. Kh. el-Beidâ.    |
| 158. Kh. Abū Hārûn.         | 196. Rujm Ḥebeis.     |
| 159. Kh. Abū Hārûn.         | 197. Senefheh.        |
| 160. Kh. Ḥedâd.             | 198. Kh. ed-Deir.     |
| 161. Kh. Bîr Melâḥîn.       | 199. Kh. Umm She'îr.  |
| 162. Kh. Ḥeleileh.          | 200. 'Ain Jurbân.     |
| 163. Kh. el-Weibdeh.        | 201. 'Ain Ḥaddâdeh.   |
| 164. Kh. Ishrâ.             | 202. Kh. en-Nimteh.   |
| 165. Kh. Jefâfleh.          | 203. Qaṣr ed-Deir.    |
| 166. Kh. Shemmâkh.          | 204. Kh. Umm She'îr.  |
| 167. Kh. Usdûr el-Leweimeh. | 205. Kh. 'Âbel.       |
| 168. Kh. Sarâb.             | 206. el-'Eimeh.       |
| 169. Kh. el-Qleib.          | 207. eḍ-Debâ'ah.      |
| 170. Kh. 'Azûm.             | 208. Rabâbeh.         |
| 171. Kh. el-Gharqah.        | 209. Kh. el-Adanîn.   |
| 172. Kh. Mugheirah.         | 210. Bîr Melîḥ.       |
| 173. Kh. Umm Lôzah.         | 211. Kh. Musrab.      |
| 174. Kh. Beweitrah.         | 212. Kh. Rihâb.       |
| 174a. Ain el-Ḥabîs.         | 213. Kh. el-Qarn.     |
| 175. Kh. el-Bustân.         | 214. Kh. Bîr Jummah.  |
| 176. Rujm el-'Arâqîb.       | 215. Kh. es-Sab'ah.   |
| 177. Qaṣr Abū el-Başal.     | 216. Kh. edh-Dherfî.  |
| 178. Rujm el-'Amârīyeh.     | 217. Rujm Jâ'ez.      |
| 179. Kh. eṭ-Ṭawârah.        | 218. Ruin.            |
| 180. Kh. el-Meqeir.         | 219. Kh. Jâ'ez.       |
| 181. Kh. es-Semeirâ.        | 220. Ruin.            |
| 182. Kh. Ḥemâṭah.           | 221. el-'Aineh.       |
| 183. Kh. Ṭawîl Ifjeij.      | 222. el-Medeiyineh.   |
| 184. Rujm Ras el-Ḥâlâ.      | 223. Ruin.            |
| 185. Rujm Ḥâlâ el-Qarâneh.  | 224. Kh. Bâkher.      |

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|--------------------------------|---------------------------|
| 225. Rujm el-Muṣfarah.         | 242. Rujûm Şfei.          |
| 226. Ruin.                     | 243. Qaşr Şfar.           |
| 227. Rujm Muṣfarah el-'Āliyah. | 244. Kh. Şfar.            |
| 228. Roman milestones.         | 245. Rujm Şfar.           |
| 229. Kh. el-Baqarah.           | 246. Rujm eth-Theikah.    |
| 230. Kh. Abū Benneh.           | 247. Kh. Abū er-Reteimât. |
| 231. Kh. en-Nôkhah.            | 248. Şbeiṭah.             |
| 232. Kh. Mashmîl.              | 249. 'Aujā Ḥafîr.         |
| 233. Rujm Kerakeh.             | 250. 'Ain el-Qudeirât.    |
| 234. Kh. Kerakeh.              | 251. Ruin.                |
| 235. Qal'at Freifreh.          | 252. 'Ain Qadeis.         |
| 236. Jebel Şiyâghah.           | 253. Rujm Umm Qaṭar.      |
| 237. Rujm el-Herî.             | 254. Bîrein.              |
| 238. Kh. 'Ayûn Mûsâ.           | 255. 'Amâret Khrâsheh.    |
| 239. Kh. Mekhayyeṭ.            | 256. Bîr Ḥafîr.           |
| 240. Kh. Qurn el-Kibsh.        | 257-261. Ruins.           |
| 241. Qurnub.                   |                           |

BRONZE AGE AND IRON AGE SITES IN MOAB AND EDM.<sup>444</sup>

## I, EB III-MB I sites.

47. Lejjûn.
50. Jâlûl.
52. el-'Âl.
54. Kh. er-Rufaiseh.
79. Kh. et-Teim.
85. Umm el-'Amad.
99. el-Lehûn.
100. 'Arâ'ir.
110. Bâlû'ah.
121. Rujm Umm el-Qleib.
122. Kh. Miş'ar.
137. el-Mişna'.
141. Kh. el-Medeiyneh (by Wâdî el-Môjib).
143. Ader.

## II,

3. es-Şâfi.
14. Feinân.
221. el-'Aineh.
232. Kh. Mashmîl.
240. Kh. Qurn el-Kibsh.

## I, EI I-II sites.

1. Jâwah.
19. Imtât.
26. Buşeirah.
33. eth-Thuwâneh.
35. er-Ruweihah.
45. Medeibî'.
50. Jâlûl.
51. Heshbân.
52. el-'Âl.
54. Kh. er-Rufaiseh.
55. Zobâyer el-Qaşal.

66. Kh. el-Herî.
68. Kh. el-Medeiyneh (by Wâdî eth-Themed).
71. Qaşr ez-Za'ferân II.
72. Qaşr ez-Za'ferân I.
74. Kh. ed-Deleilat esh-Sherqîyeh.
76. Kh. Libb.
79. Kh. et-Teim.
85. Umm el-'Amad.
92. Sâliyeh.
94. Jemeil.
100. 'Arâ'ir.
103. Dhîbân.
110. Bâlû'ah.
122. Kh. Miş'ar.
136. er-Rabbah?
137. el-Mişna'.
141. Kh. el-Medeiyneh (by Wâdî el-Môjib).

## II,

9. Kh. Hamr Ifdân.
10. Kh. en-Nahâs.
11. Kh. el-Gheweibeh.
12. Kh. el-Jâriyeh.
14. Feinân.
20. Mene'îyyeh.
25. Mrashash.
31. Kh. Neqb esh-Shtâr.
34. Kh. esh-Shedeiyid.
43. Kh. el-Moreighah.
49. Rujm Bîr Turkî.
52. Kh. Umm el-Howeitât.
53. Kh. Ghanâm.
57. Kh. 'Atîyeh.
60. Kh. et-Taiyinch.
63. Kh. Ghânam.

<sup>444</sup> See above, p. 3, n. 7.

- |                                 |  |
|---------------------------------|--|
| 65. Kh. Sweilīm.                | 167. Kh. Usdūr el-Leweimeh.              |
| 73. Kh. el-Qrein.               | 183. Kh. Ṭawfīl Ifjeij.                  |
| 76. Kh. Umm Rās.                | 184. Ruĵm Rās el-Ḥālā.                   |
| 77. Kh. Umm Ḥaṣḥas.             | 185. Ruĵm Ḥālā el-Qarāneh.               |
| 80. Kh. Sweimreh.               | 203. Qaṣr ed-Deir.                       |
| 84. Kh. el-Megheitaḥ.           | 204. Kh. Umm She'īr.                     |
| 85. 'Ain Jeweizā esh-Sherqīyeh. | 209. Kh. el-Adanīn.                      |
| 86. 'Ain Jeweizā el-Gharbīyeh.  | 215. Kh. es-Sab'ah.                      |
| 88. Kh. Ka'akah.                | 217. Ruĵm Jā'ez.                         |
| 98. Kh. Ḥeīdān.                 | 222. el-Medeiyineh (by Wādī<br>el-Ḥesā). |
| 113. Kh. Daḥāḥah.               | 224. Kh. Bākher.                         |
| 118. Kh. el-Far'ah.             | 230. Kh. Abū Benneh.                     |
| 130. Ṭawīlān.                   | 231. Kh. en-Nōkhah.                      |
| 140. Kh. 'Eraq el-Janūbīyeh.    | 233. Ruĵm Kerakeh.                       |
| 141. Kh. 'Eraq esh-Shemālīyeh.  | 237. Ruĵm el-Herī.                       |
| 145. Kh. el-Meqdes.             | 238. Kh. 'Ayūn Mūsā.                     |
| 154. Umm el-'Amad.              | 239. Kh. Mekhayyeṭ.                      |
| 163. Kh. el-Weibdeh.            | 250. Kh. Qudeirāt.                       |
| 164. Kh. Ishrā.                 |  |





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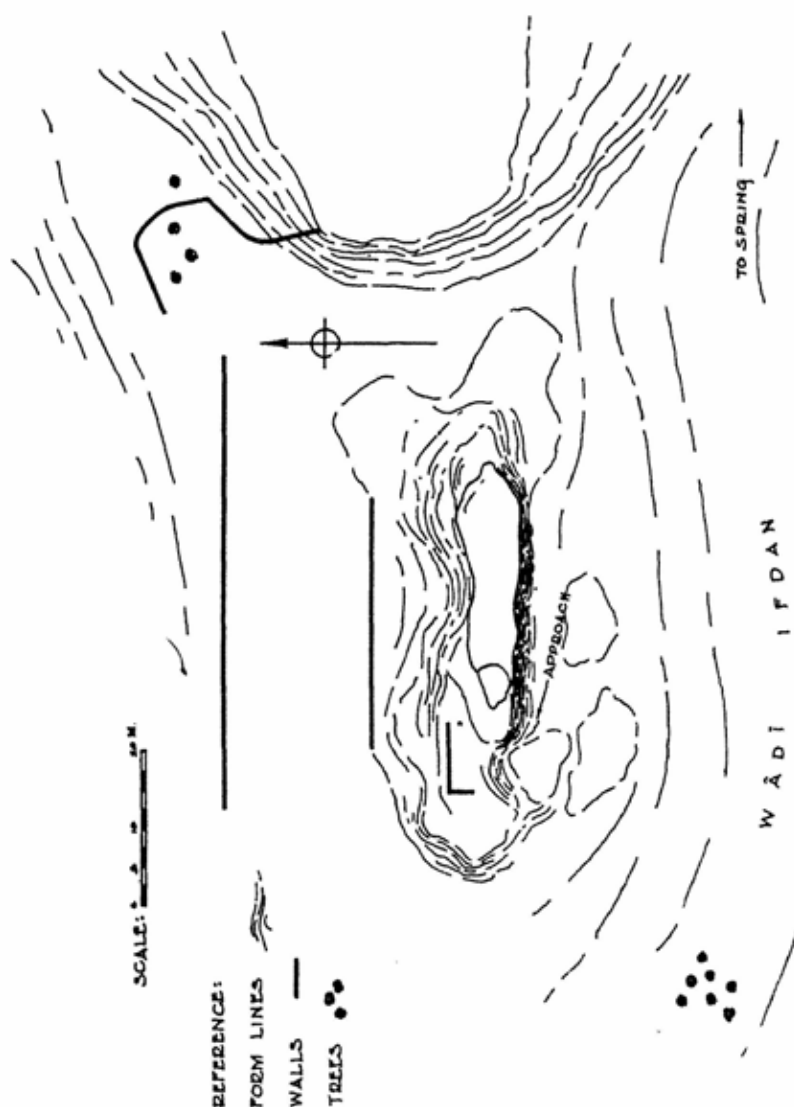
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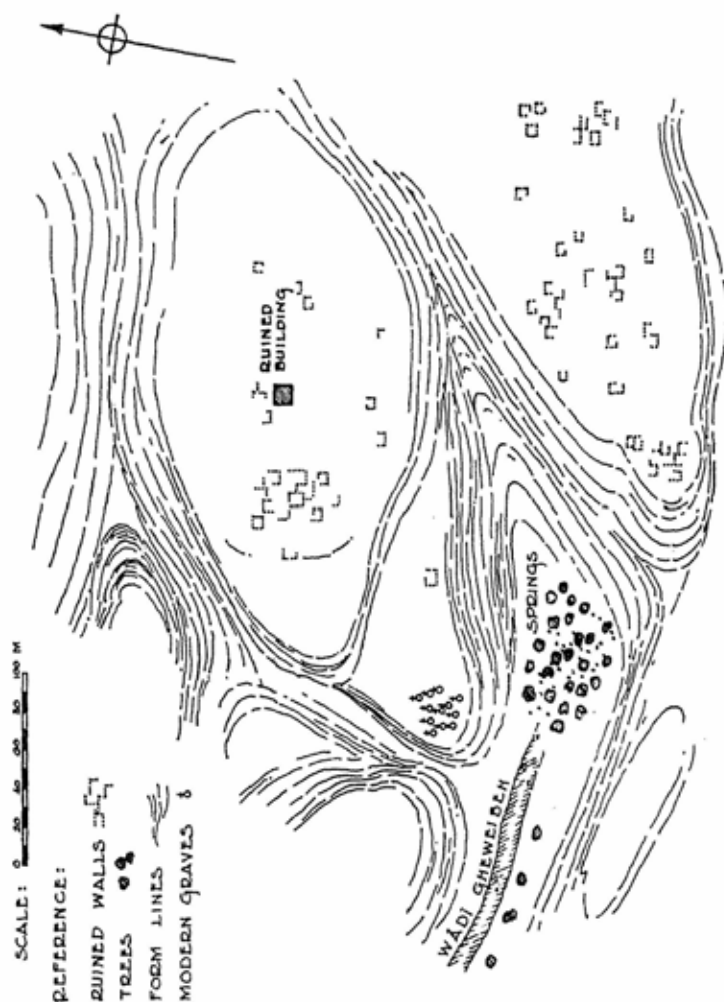
## KH. HAMR IFDÂN

SKETCH PLAN



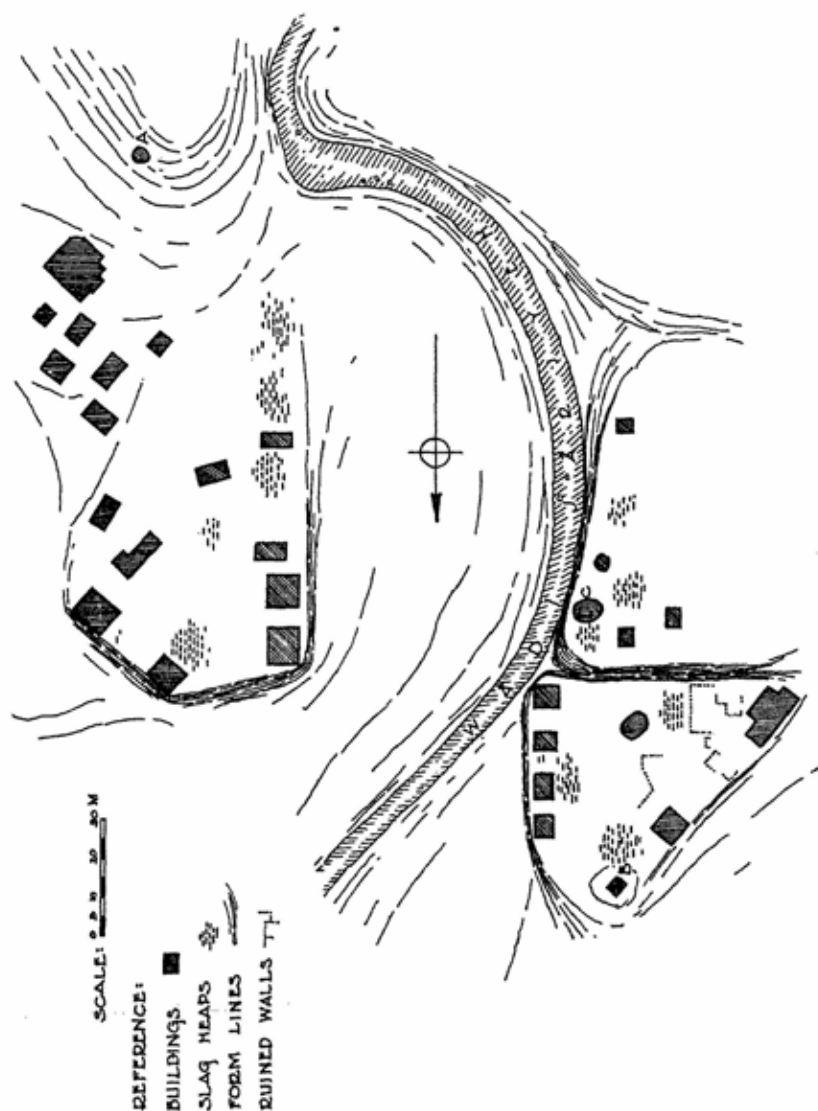
## KH. GHEWEIBEH

SKETCH PLAN



## KH. JÂRIYEH

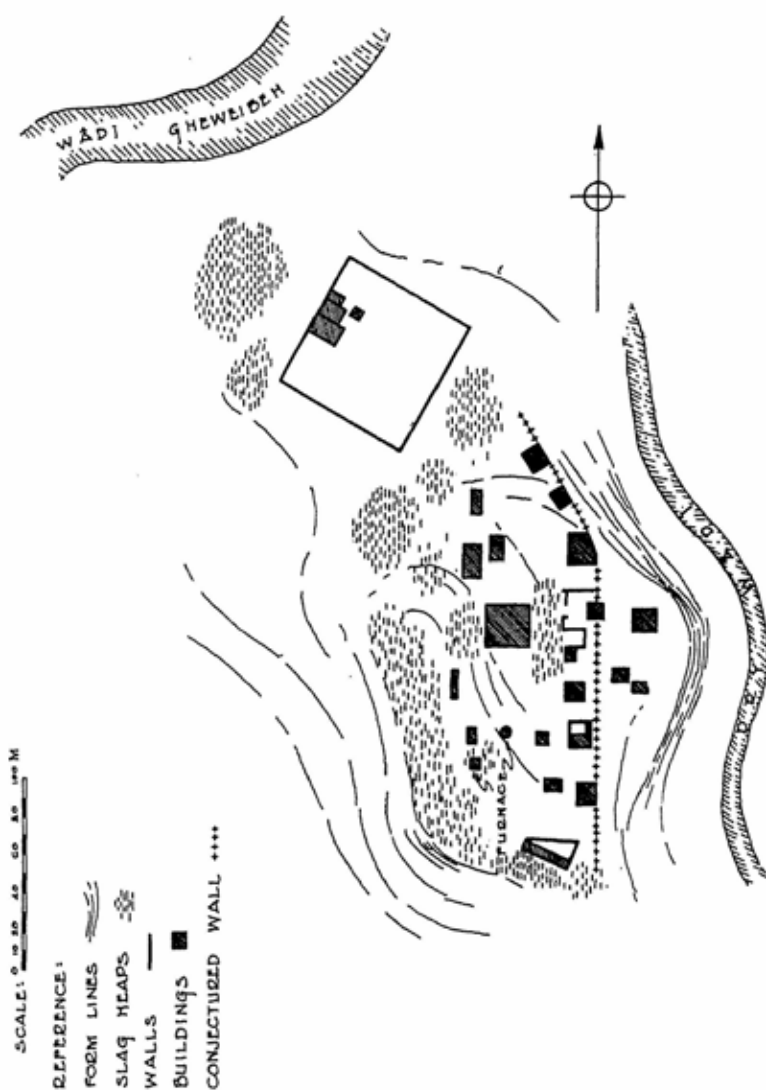
SKETCH PLAN





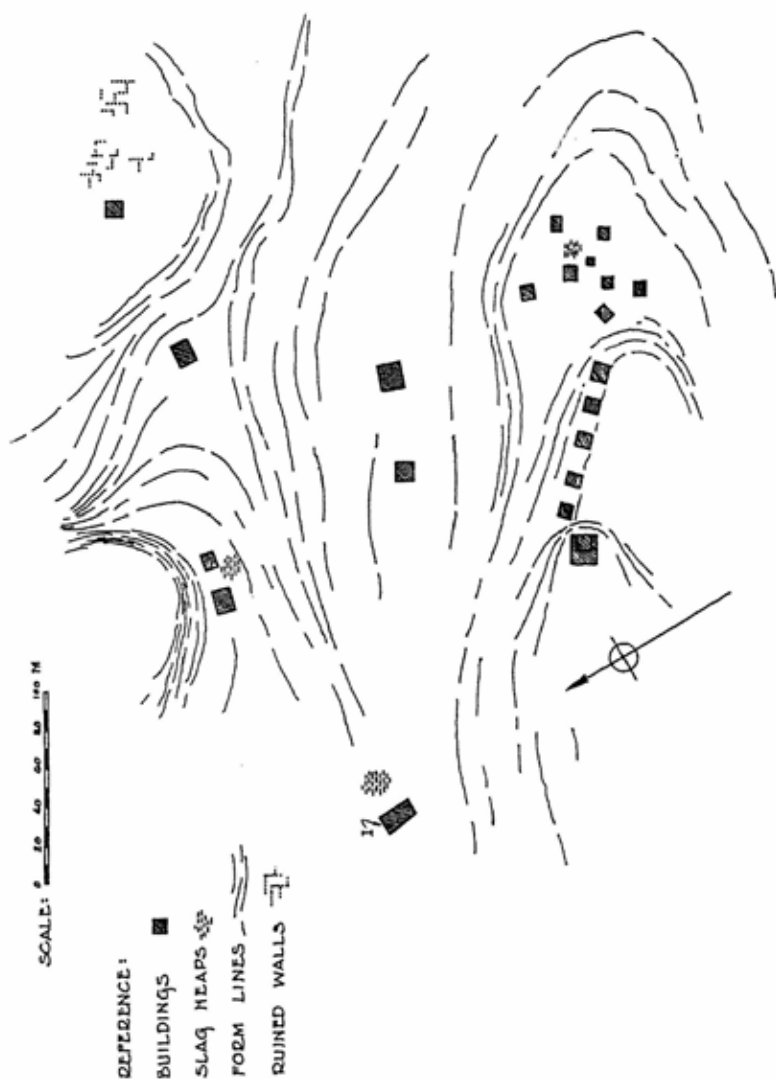
## KH. EN-NAHÂS

SKETCH PLAN



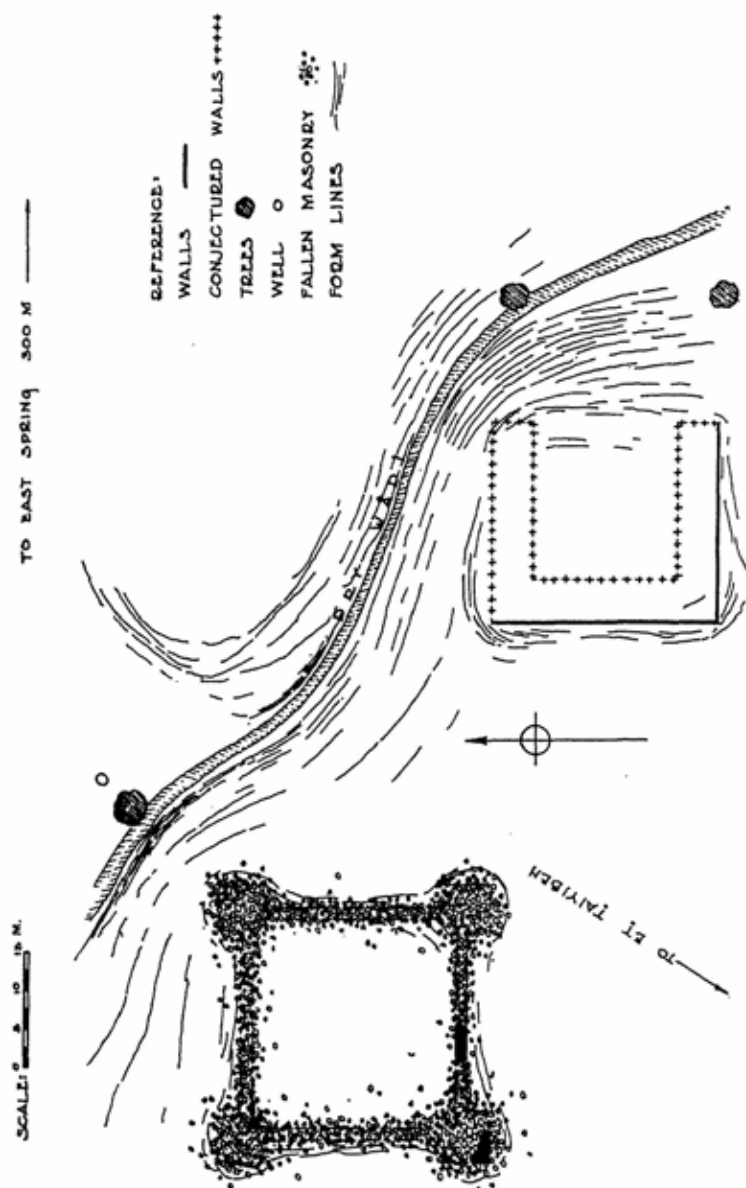
## KH. NQEIB ASEIMER

SKETCH PLAN



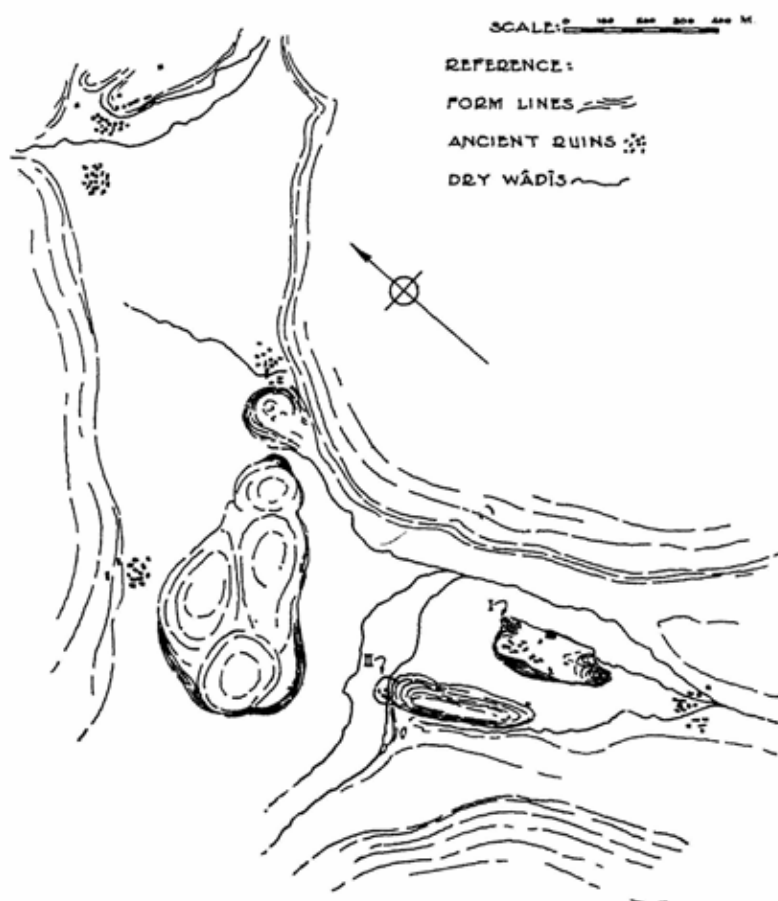
## BÎR MADHKÛR

SKETCH PLAN



## MENE 'İYYEH

SKETCH MAP



## MENE 'IYYEH I

SKETCH PLAN

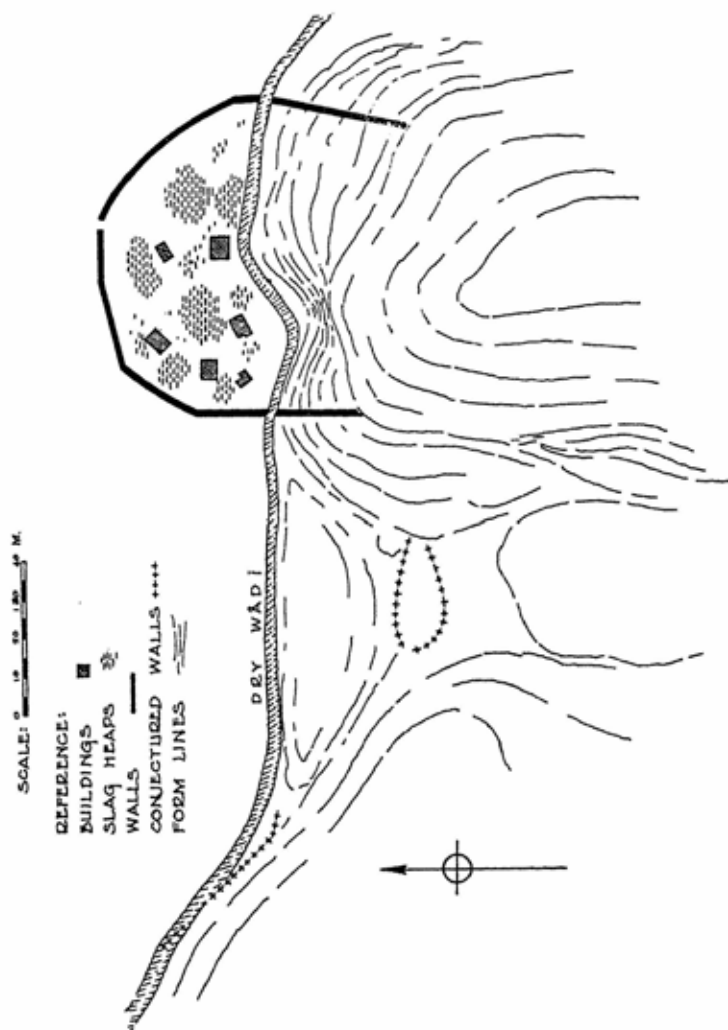
SCALE:  0 10 20 30 40 M

REFERENCE:

FORM LINES BUILDINGS WALLS SLAG HEAPS 

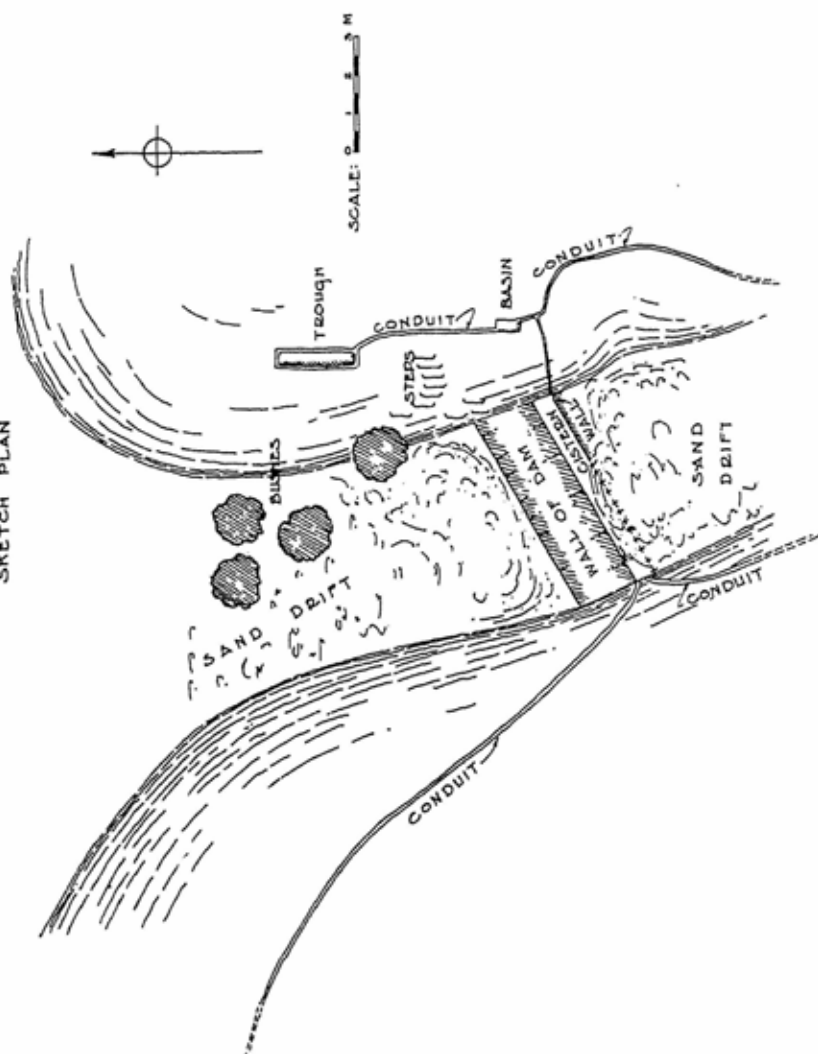
## MENE 'ITYEH II

SKETCH PLAN



## REKHEMTEIN






SKETCH PLAN



## KH. NEQB ESH-SHTÂR

SKETCH PLAN

## REFERENCE:

MODERN GRAVES TERRACES FORM LINES WALLS FOUNDATIONS REVTMENT FALLEN MASONRY CONJECTURED WALL RUINED WALLS 



## KH. ESH-SHEDEIYID

SKETCH PLAN

SCALE:  M

## REFERENCE:

- ACROPOLIS WALL ———  
TERRACE WALL - - - - -  
CONJECTURED WALL + + + + +  
REVIETMENT .....  
TOWER ■  
FORM LINES ~~~~~



## KH. EL-MOREIGHAH

SKETCH PLAN

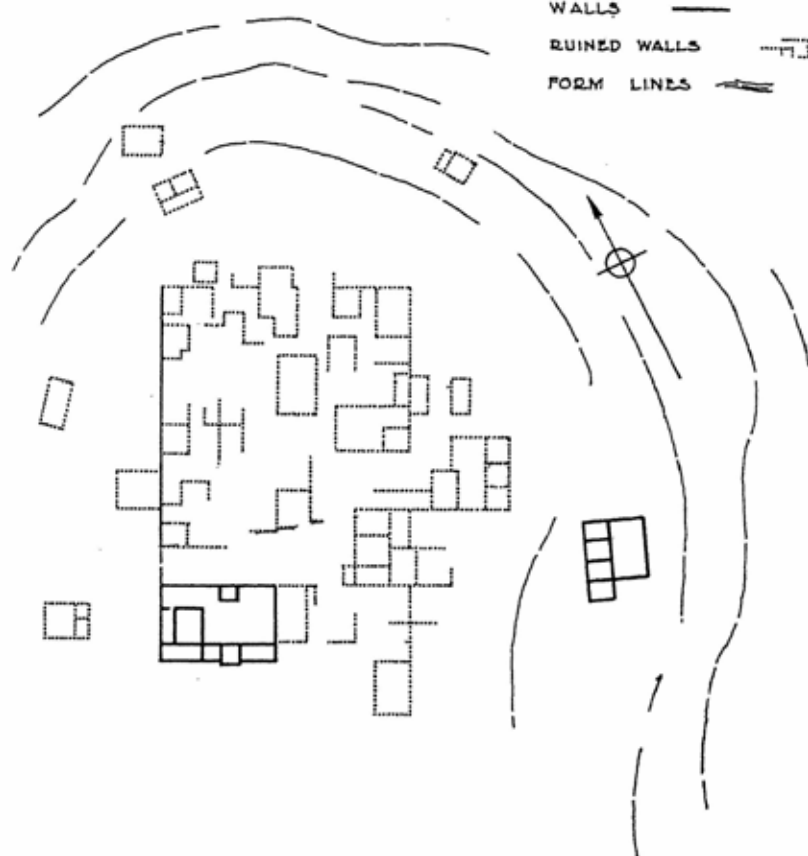
SCALE: 0 10 20 30 M.

REFERENCE:

WALLS ———

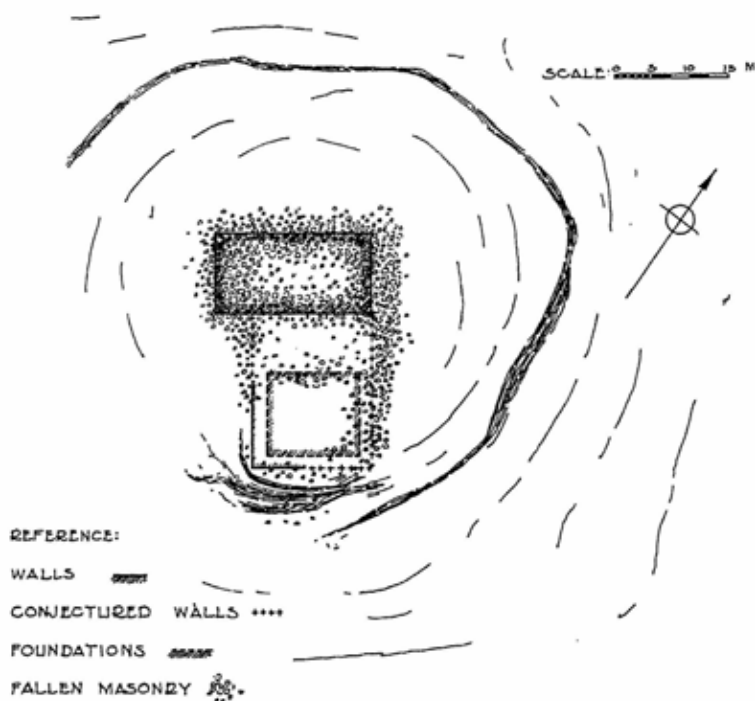
RUINED WALLS - - - - -

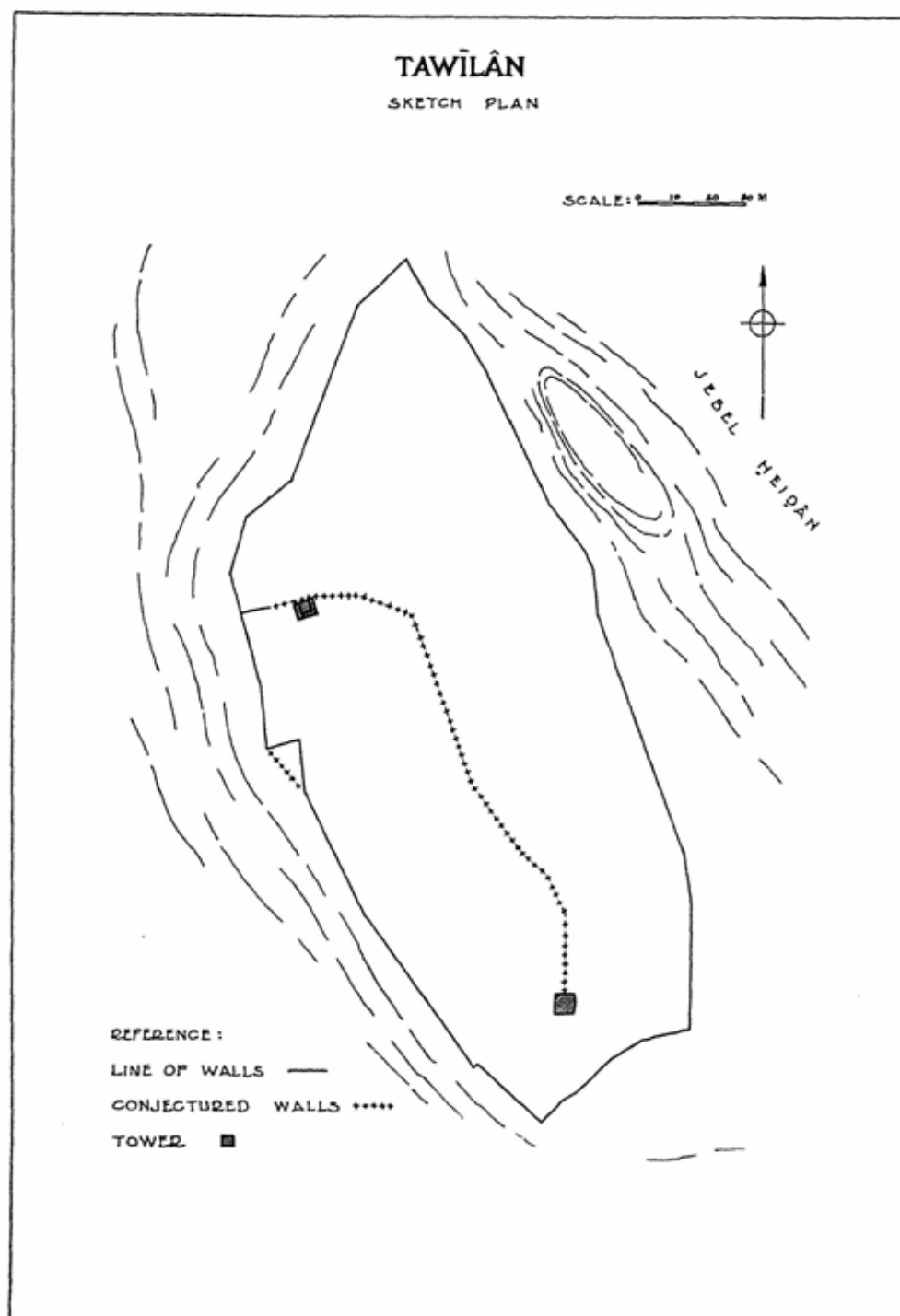
FORM LINES ———



## KH. UMM HASHAS

SKETCH PLAN





## KH. ṬAWÎL IFJEIJ

SKETCH PLAN

SCALE: 0 10 20 30 M.

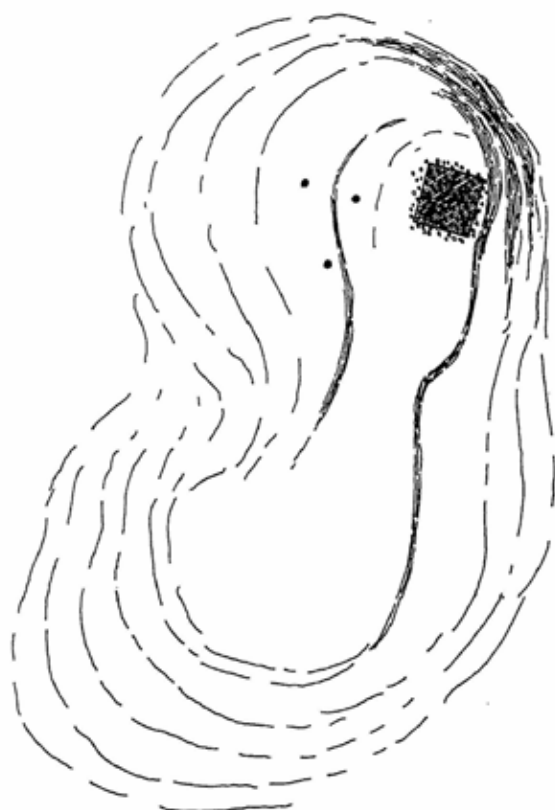
REFERENCE:

FRONTIER FORT ■

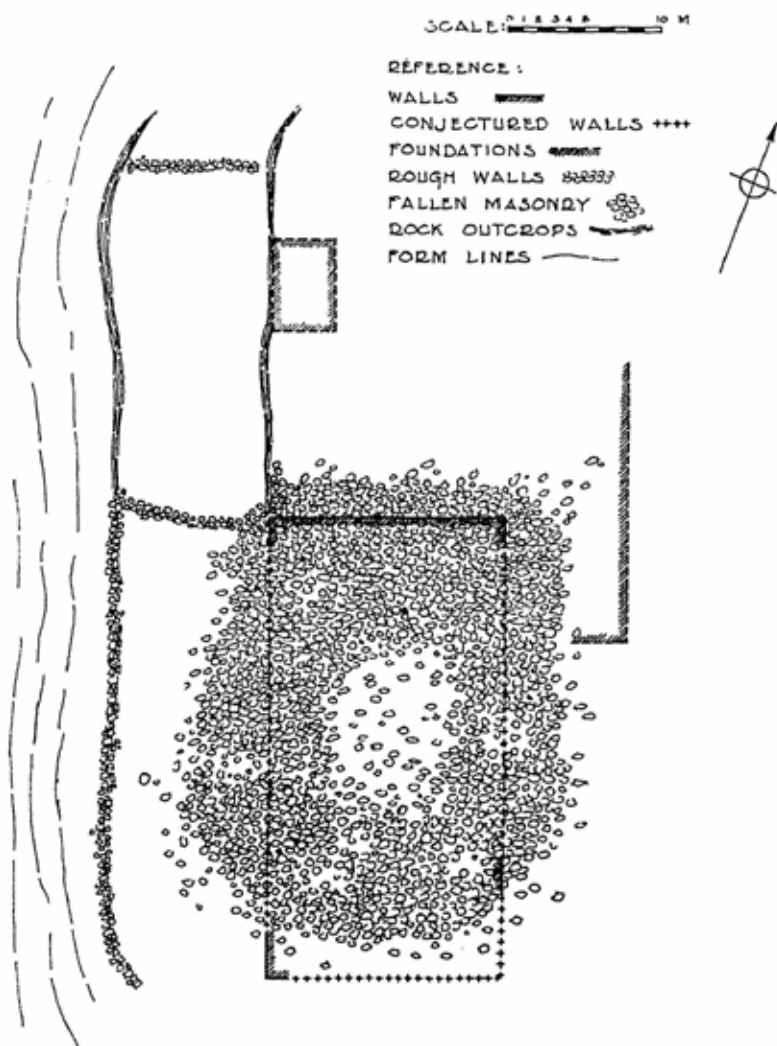
CISTERN •

FORM LINES ———

FALLEN MASONRY - - -

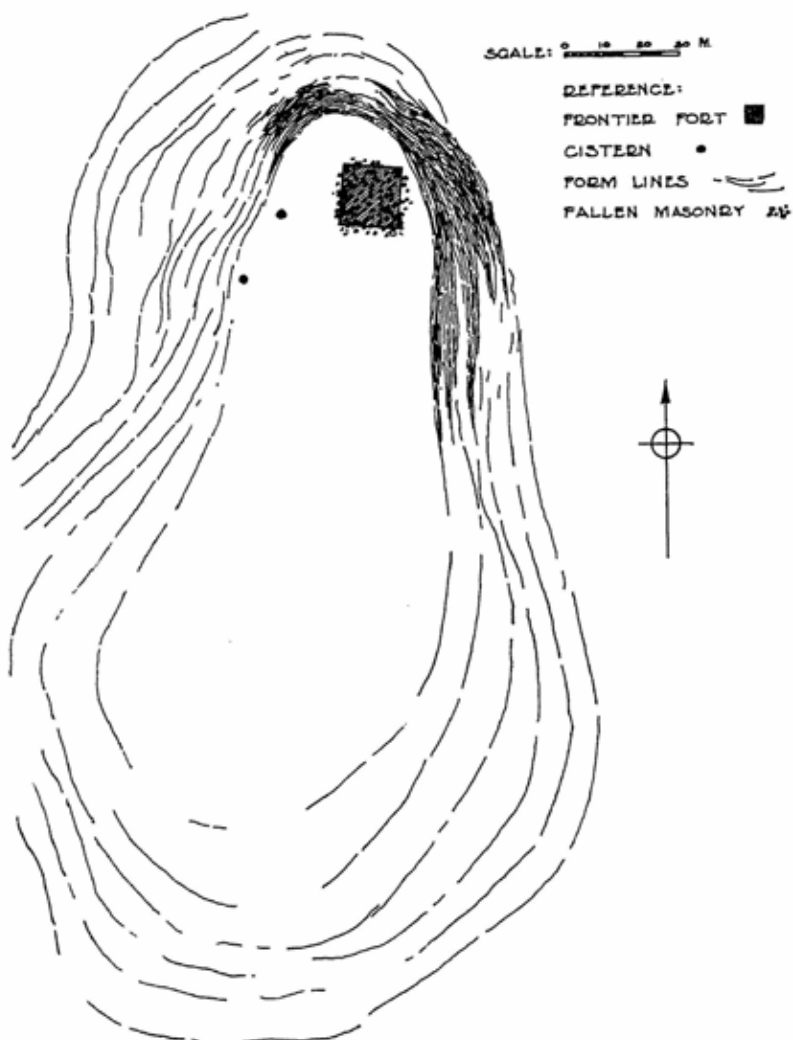


## RUJM RÂS EL-HÂLÂ



## RUJM HĀLĀ EL-QARĀNEH

SKETCH PLAN



## KH. EL-MEDEIYNEH

SKETCH PLAN

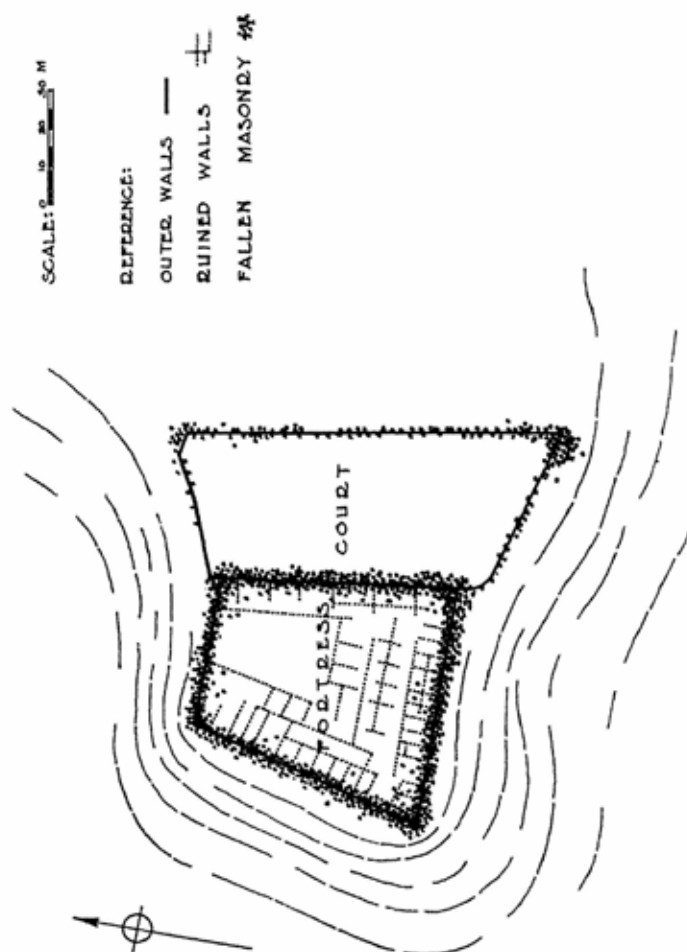


PLATE 19

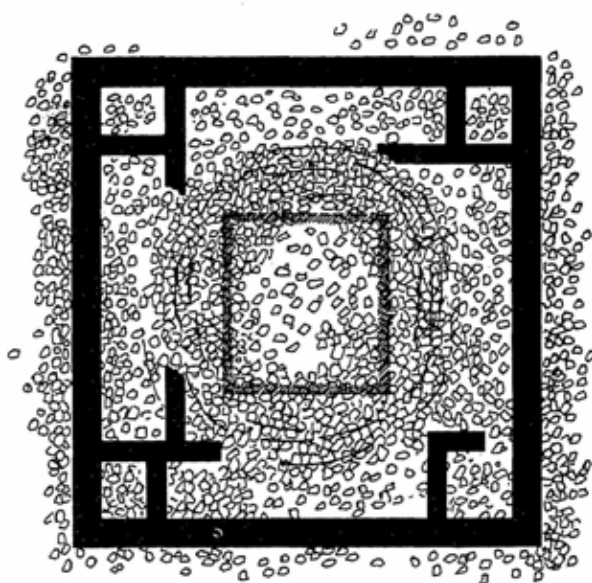


## KH. BÂKHER

SCALE: 0 1 2 3 4 5 6 7 8 M.

REFERENCE:

WALLS ———

FOUNDATIONS FALLEN MASONRY 

## RUJM EL-HERĪ

SKETCH PLAN

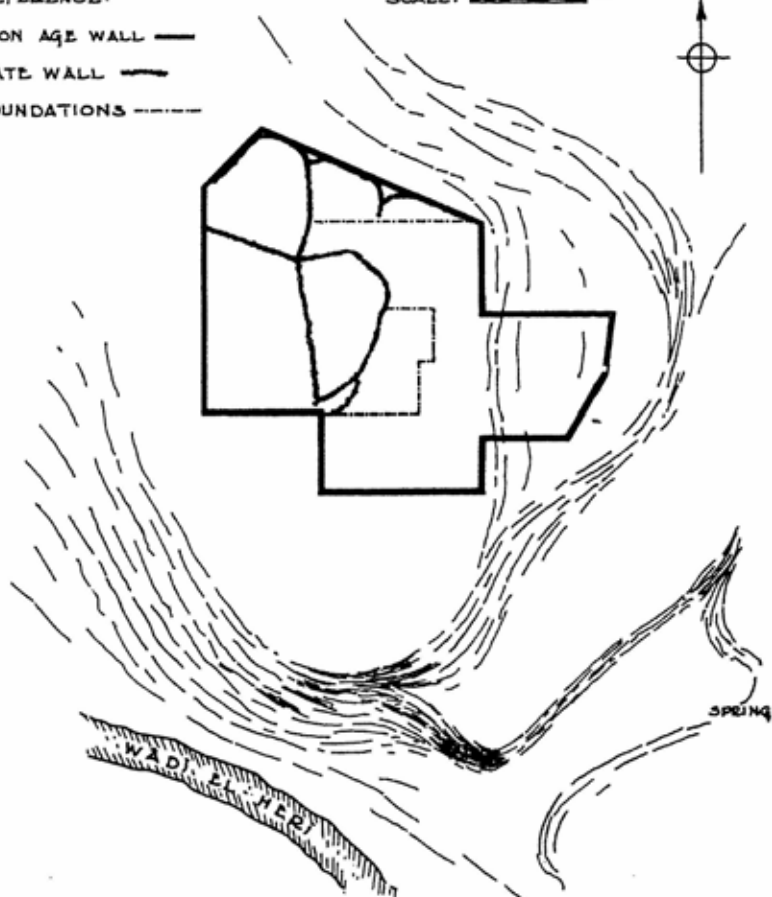
## REFERENCE:

IRON AGE WALL ———

LATE WALL ———

FOUNDATIONS - - - - -

SCALE: 0 5 10 20 M



## KH. 'AYŪN MŪSĀ

SKETCH PLAN

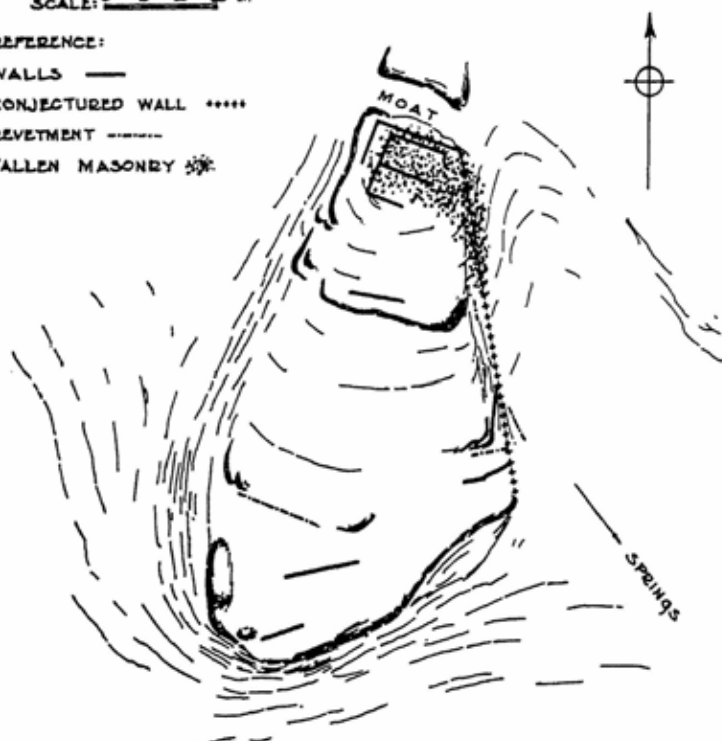
SCALE:  M.

## REFERENCE:

WALLS —

CONJECTURED WALL \*\*\*\*\*

REVTMENT - - - - -

FALLEN MASONRY 

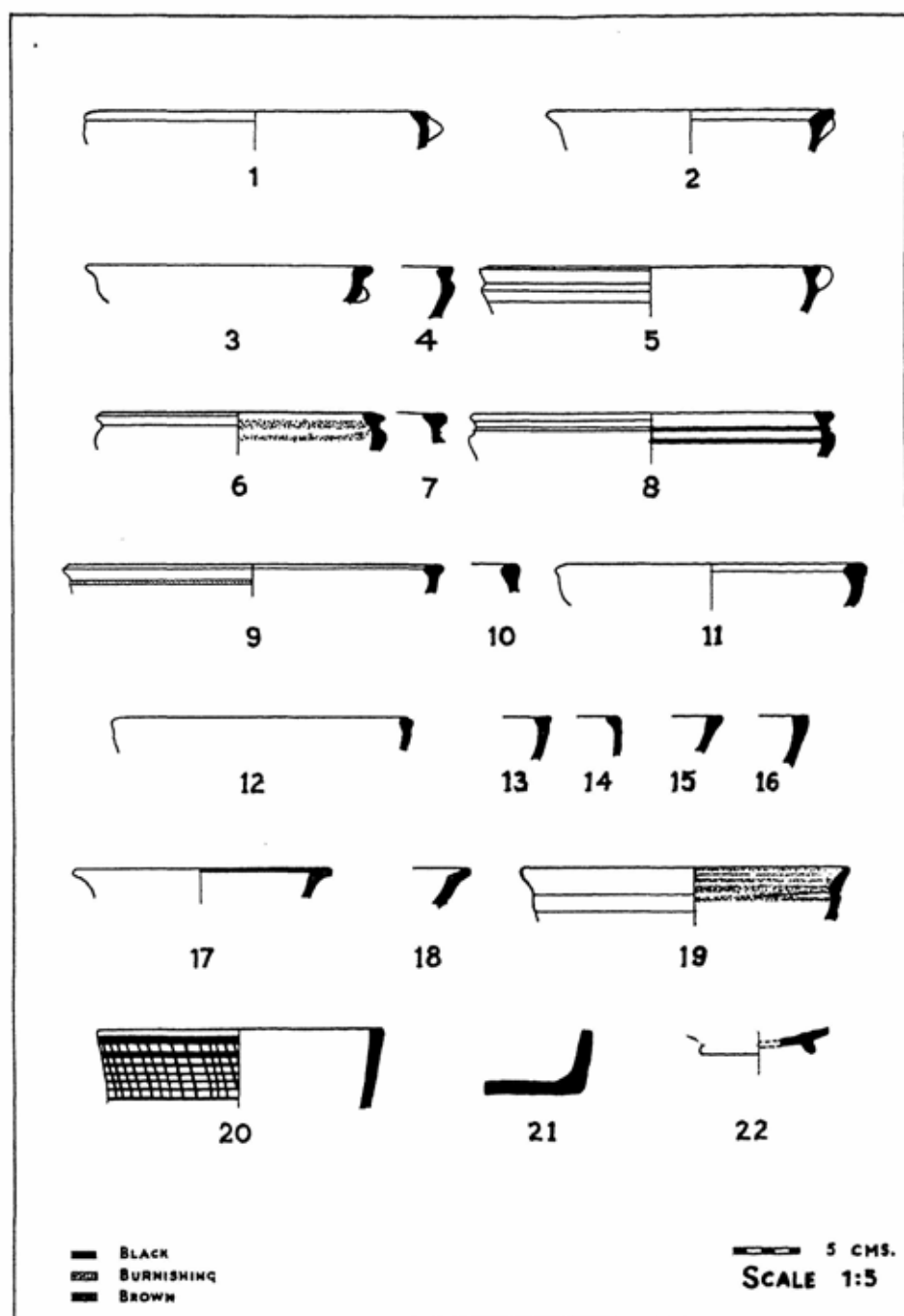


PLATE 23

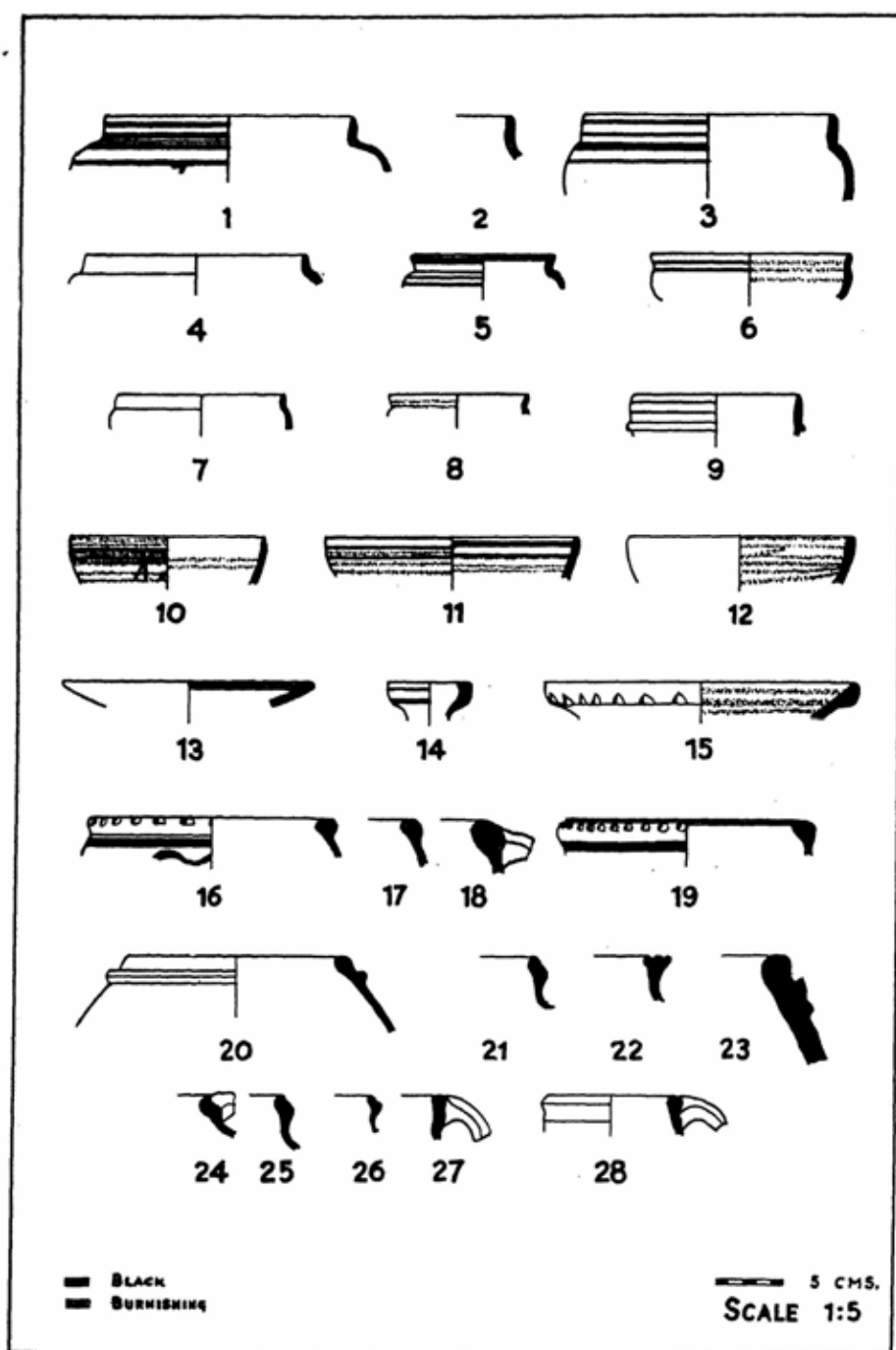


PLATE 24



PLATE 25A



PLATE 25b

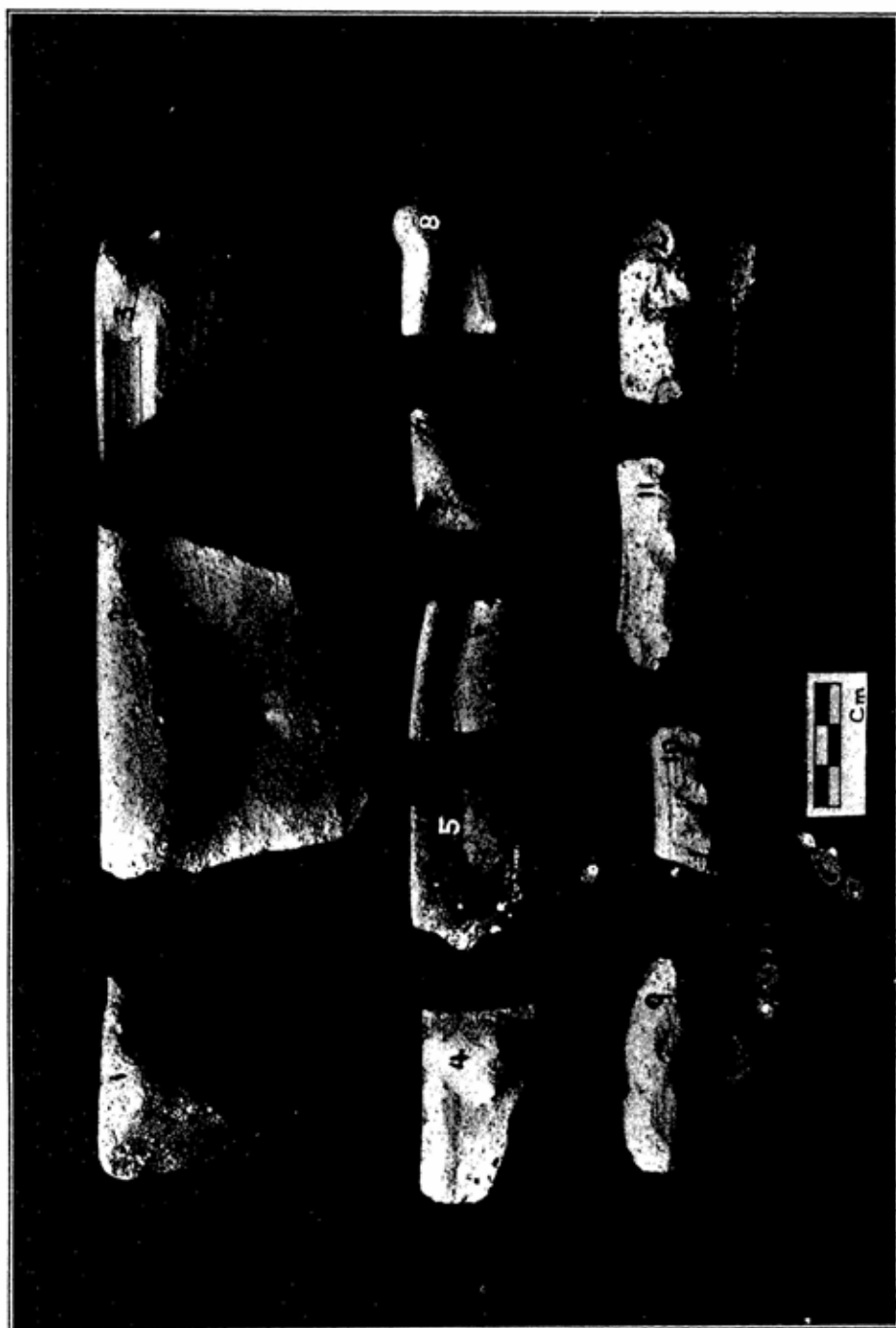


PLATE 26A



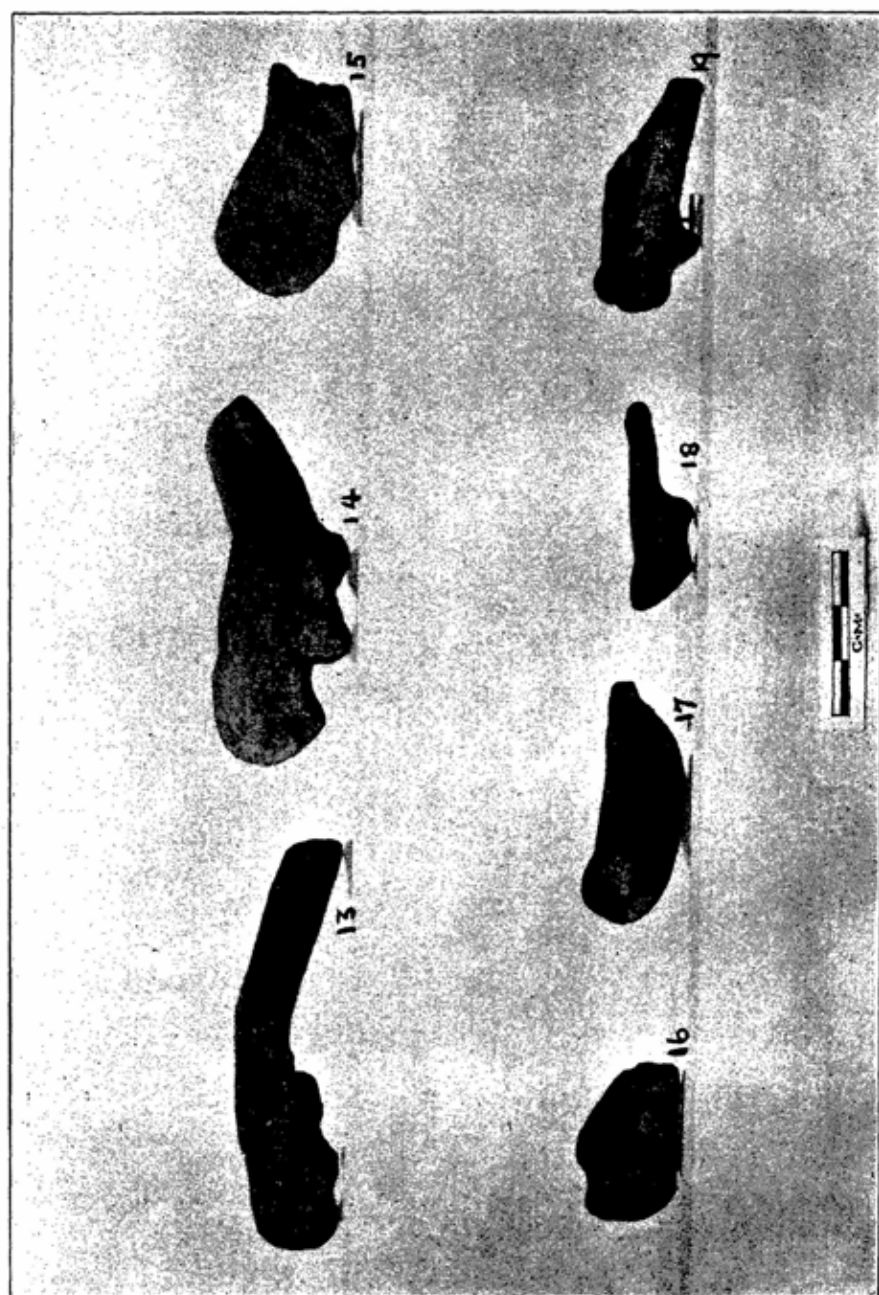


PLATE 26B

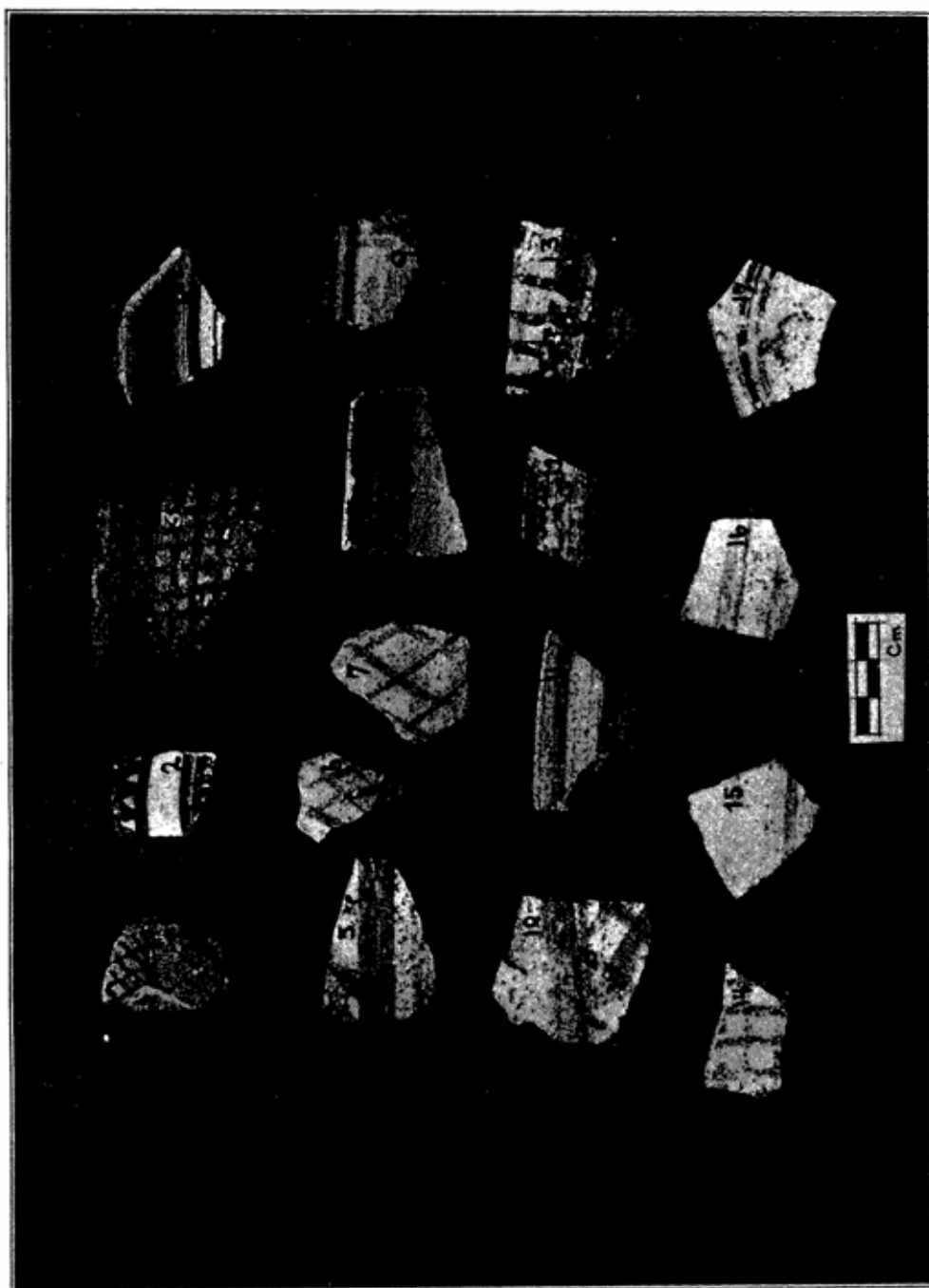


PLATE 27A

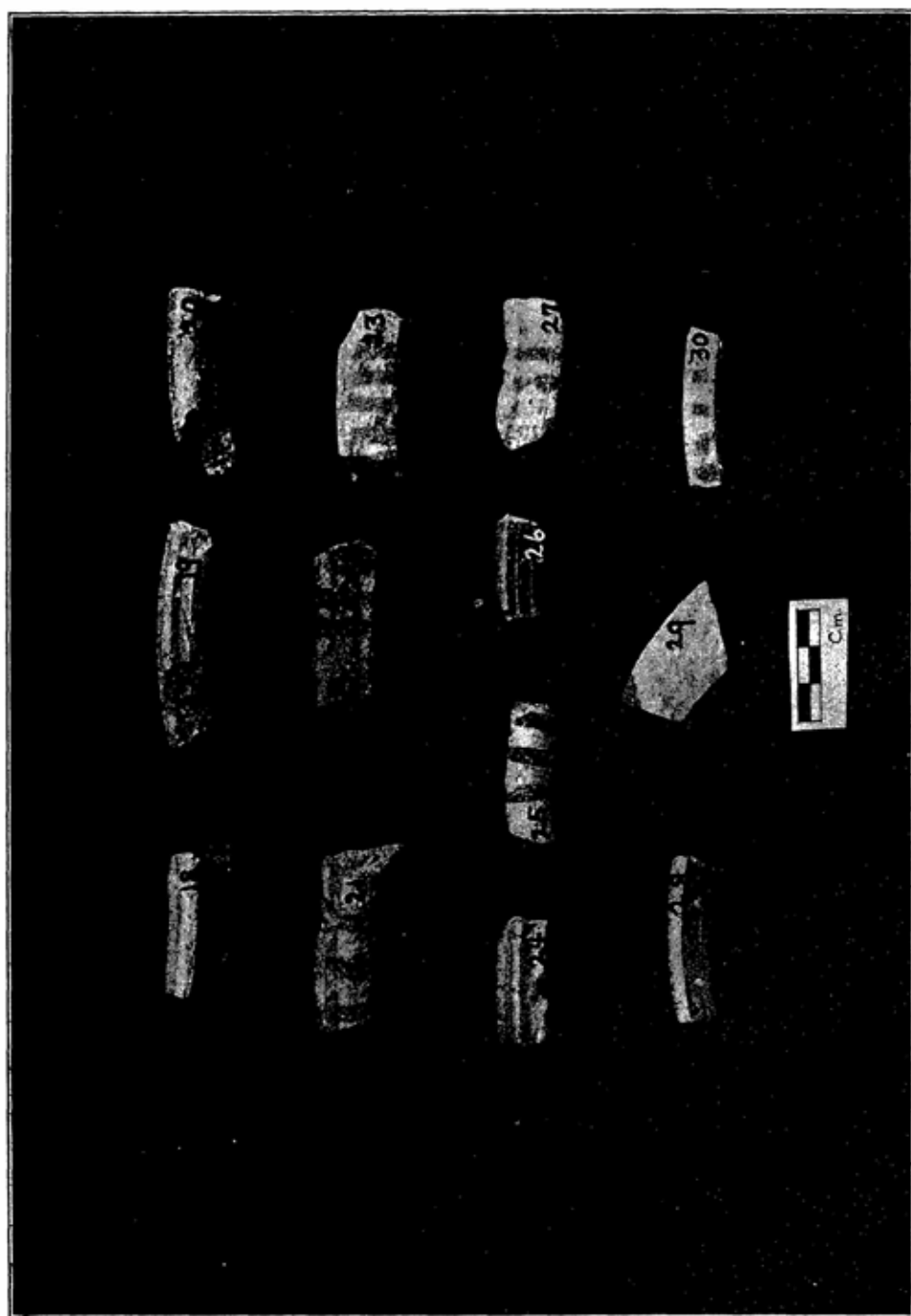


PLATE 27B

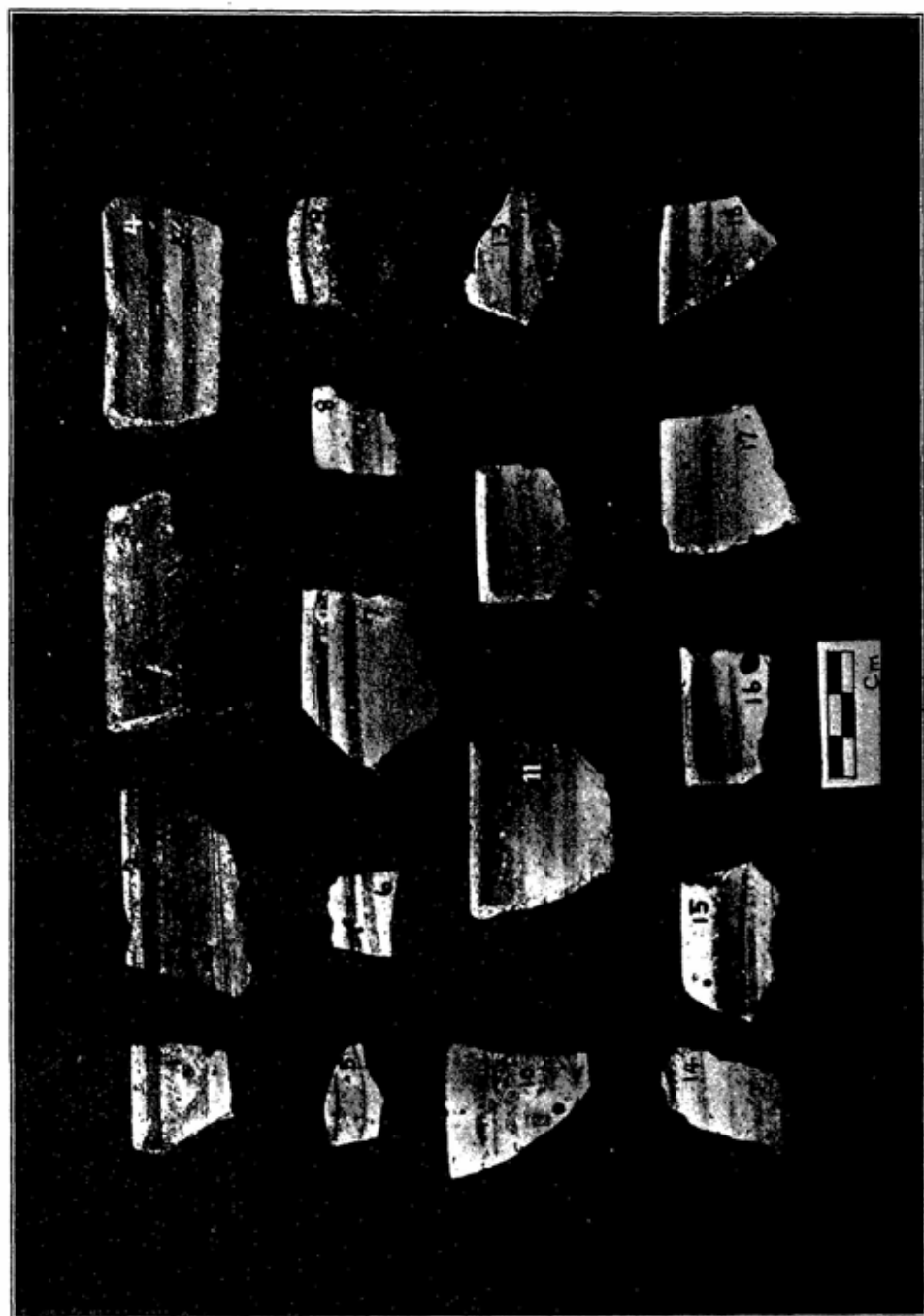


PLATE 28A

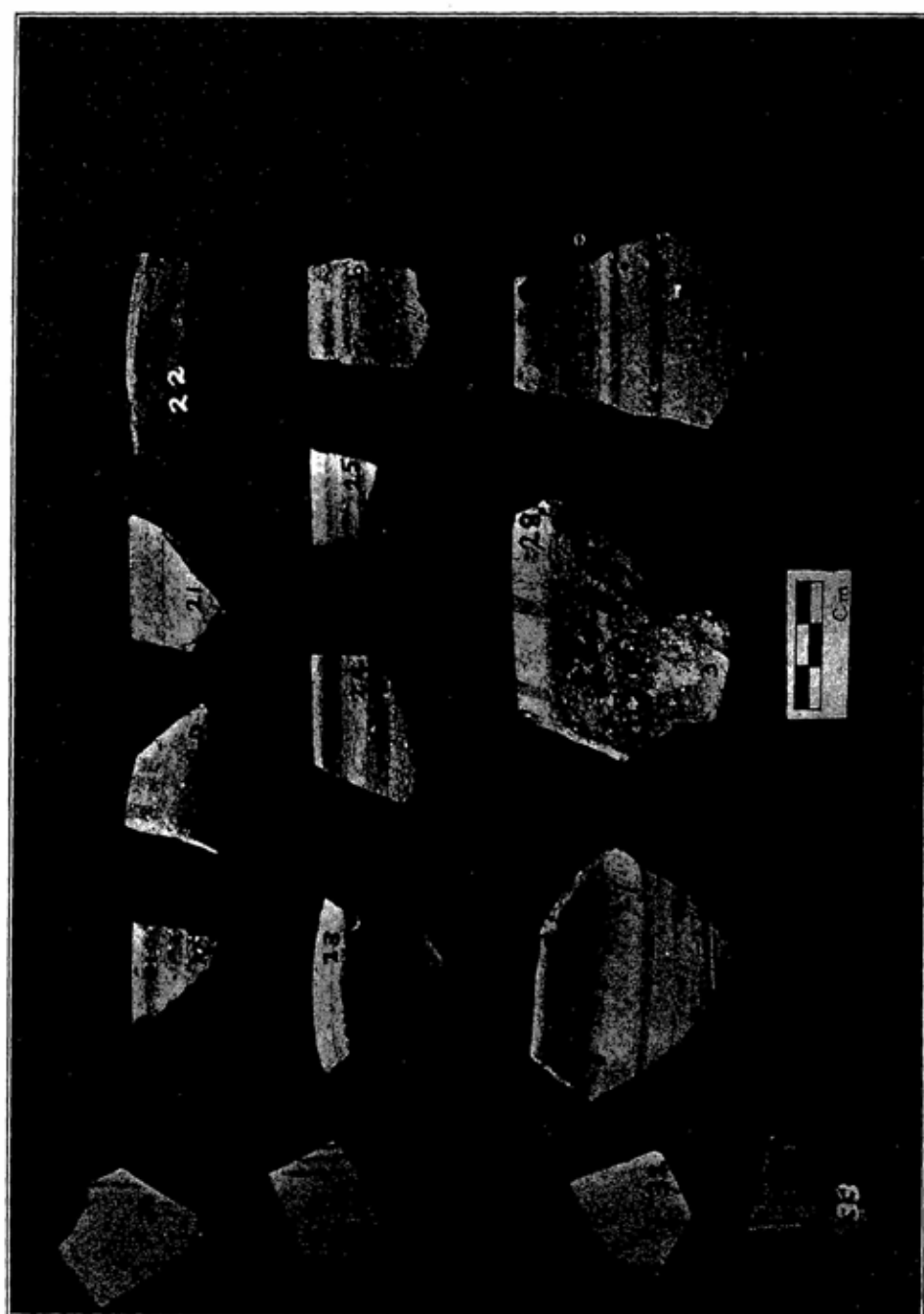


PLATE 28B

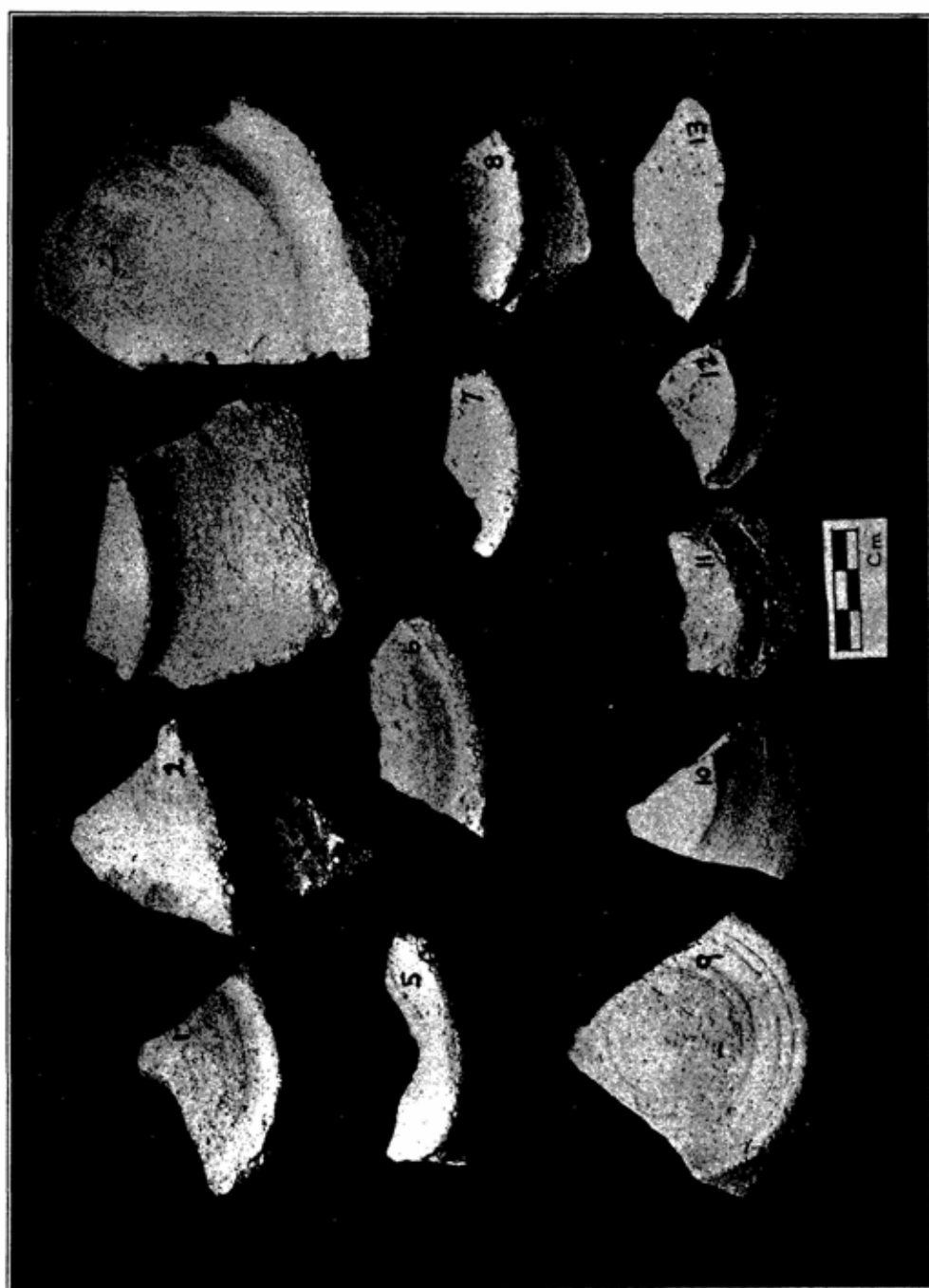


PLATE 20A

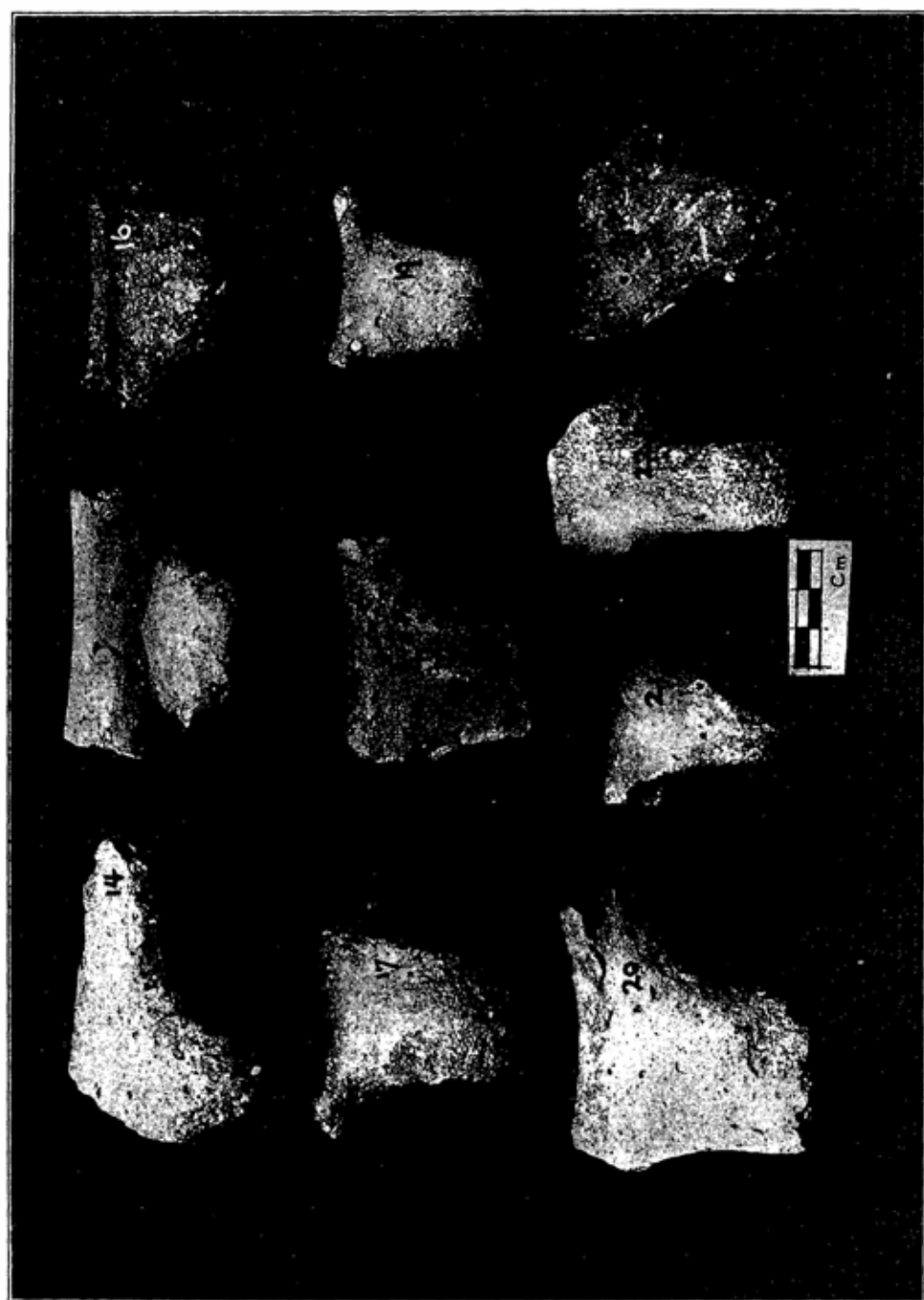


PLATE 29B

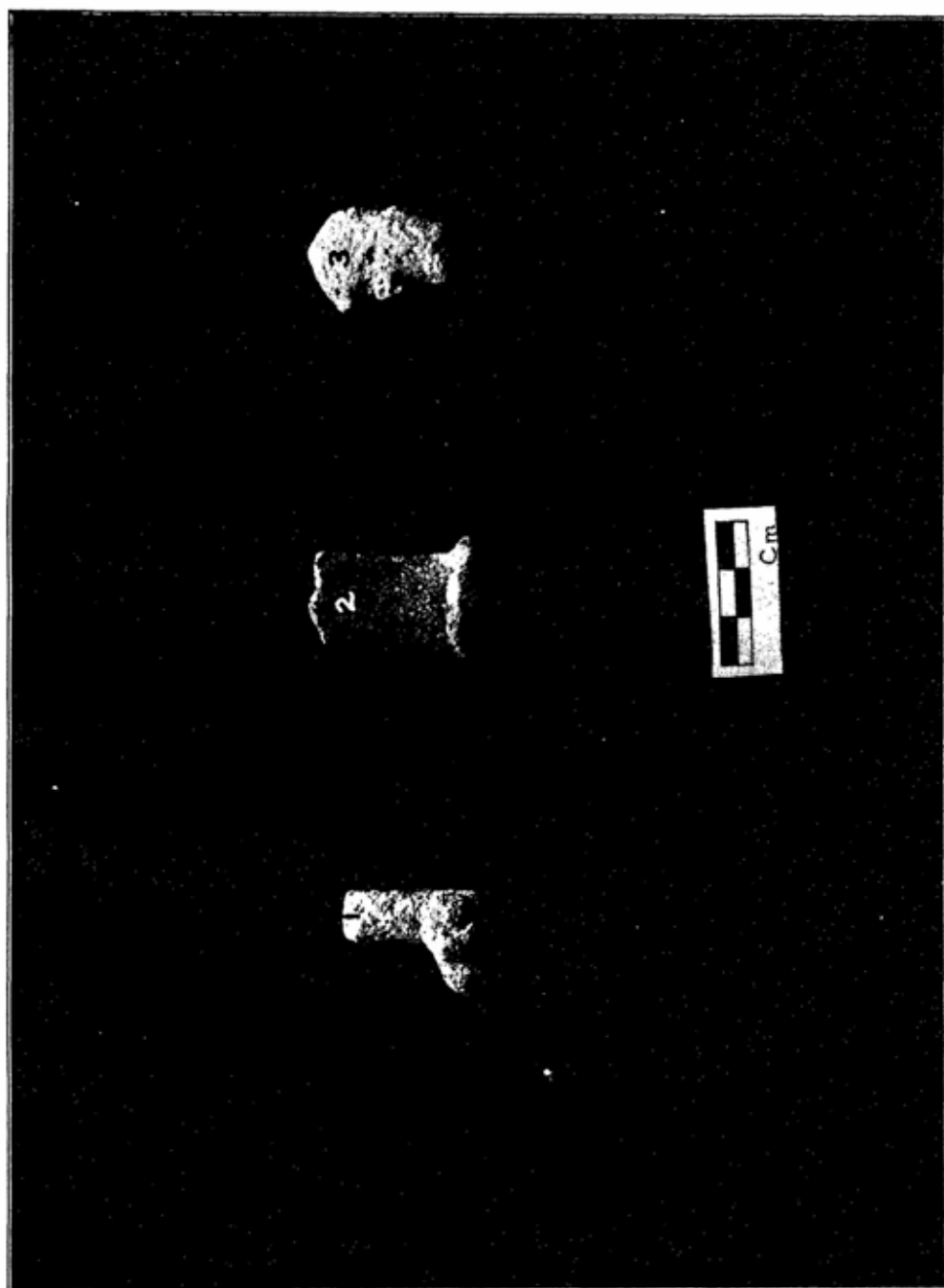


PLATE 30A



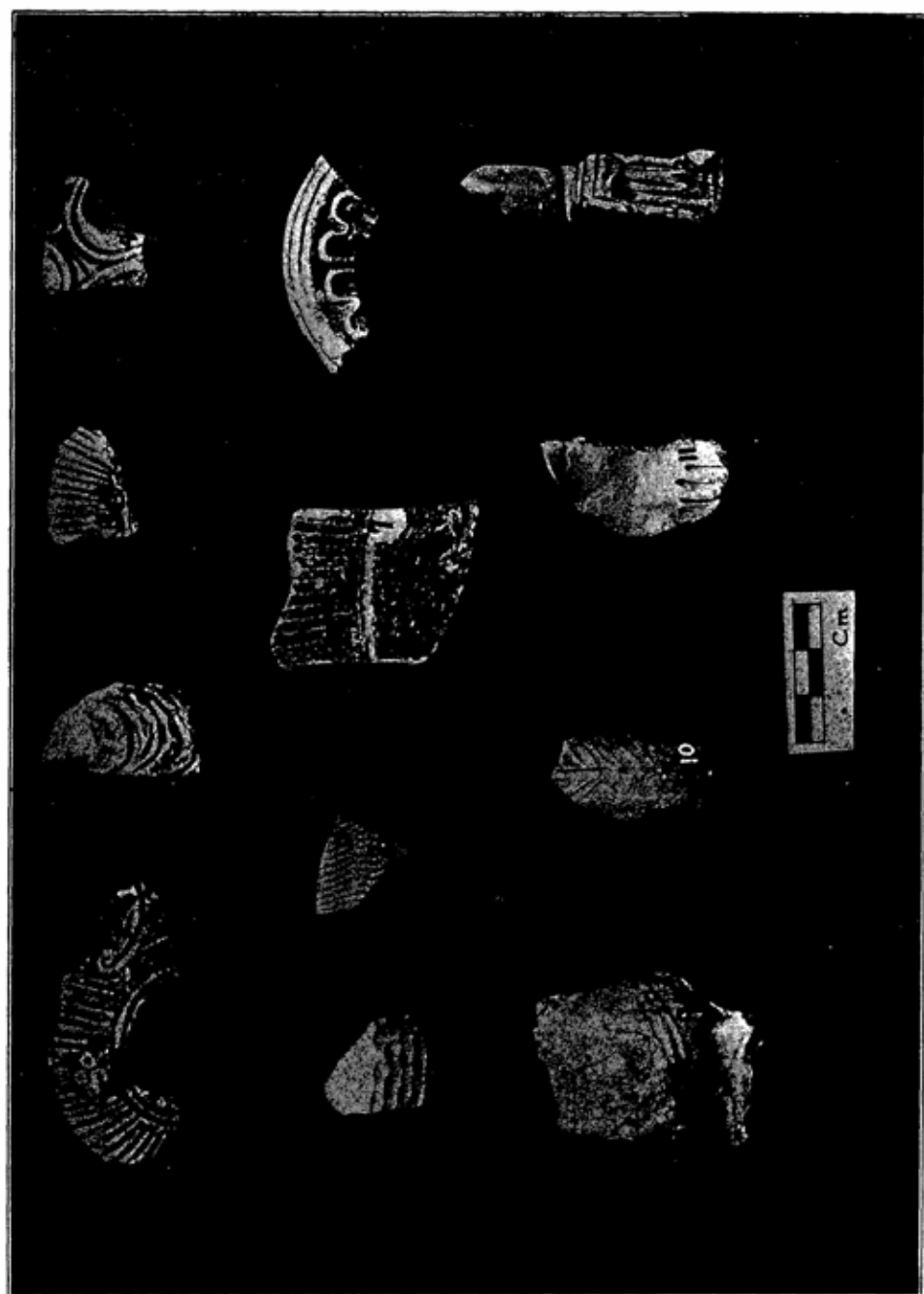


PLATE 30B

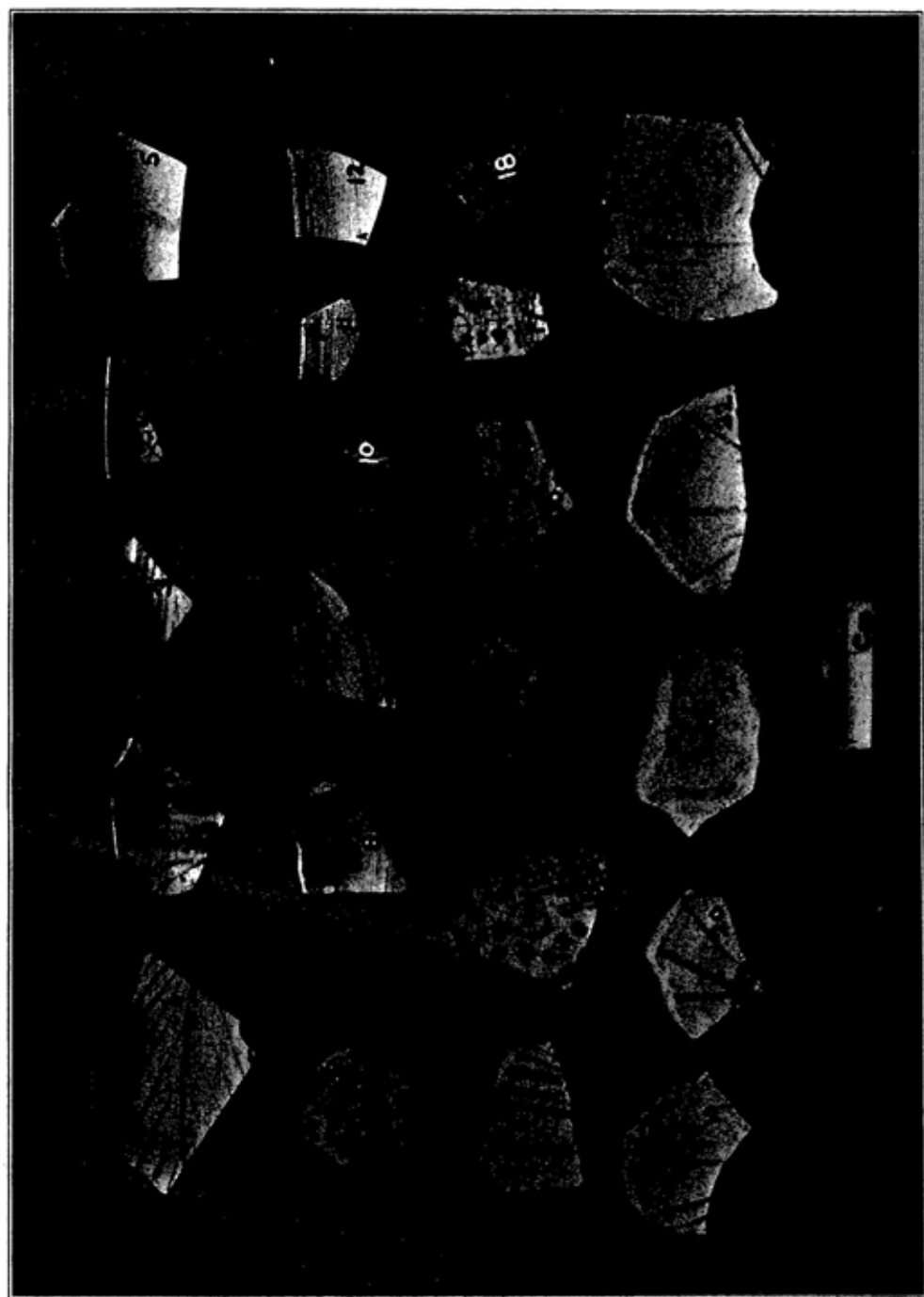


PLATE 31A

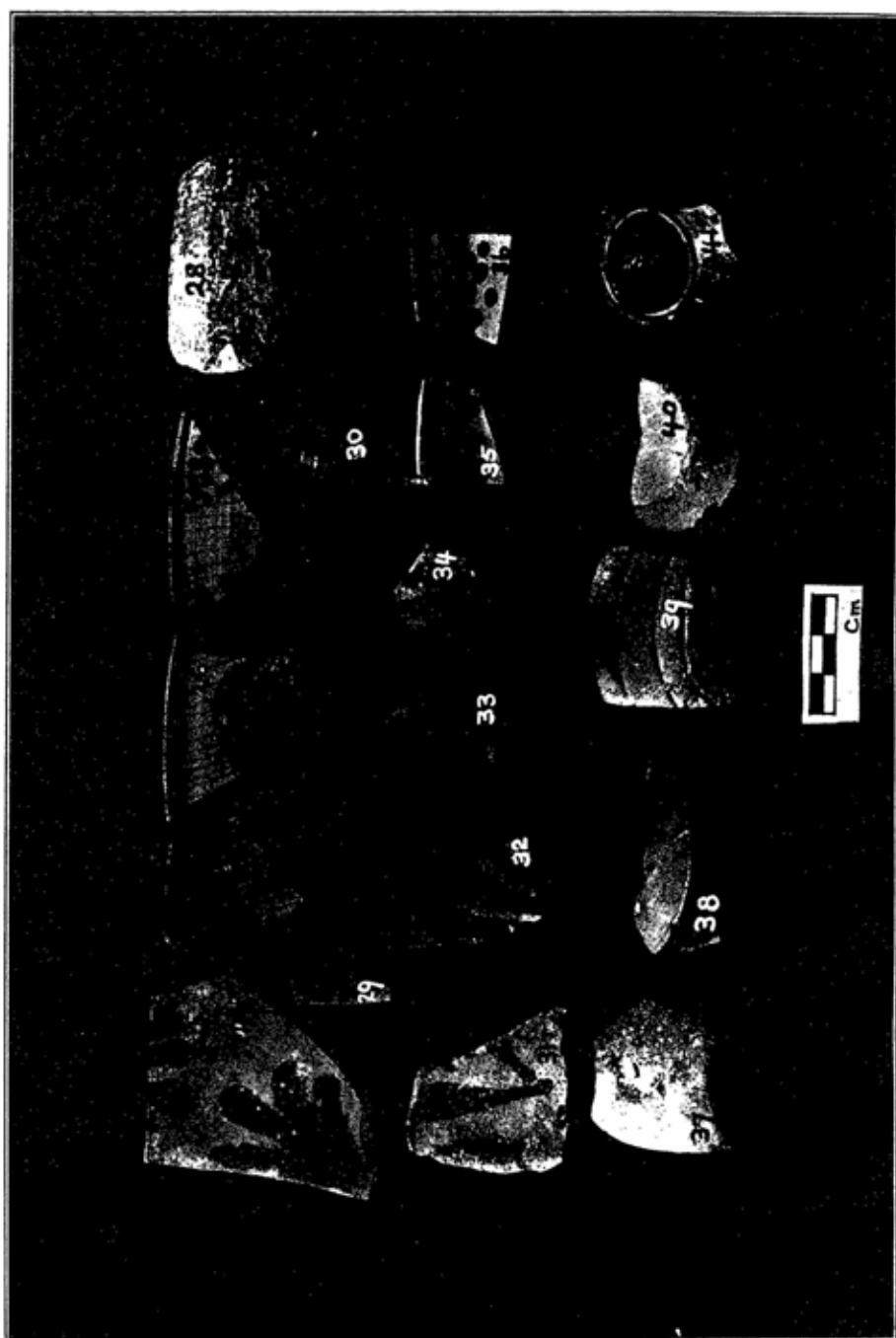


PLATE 31B

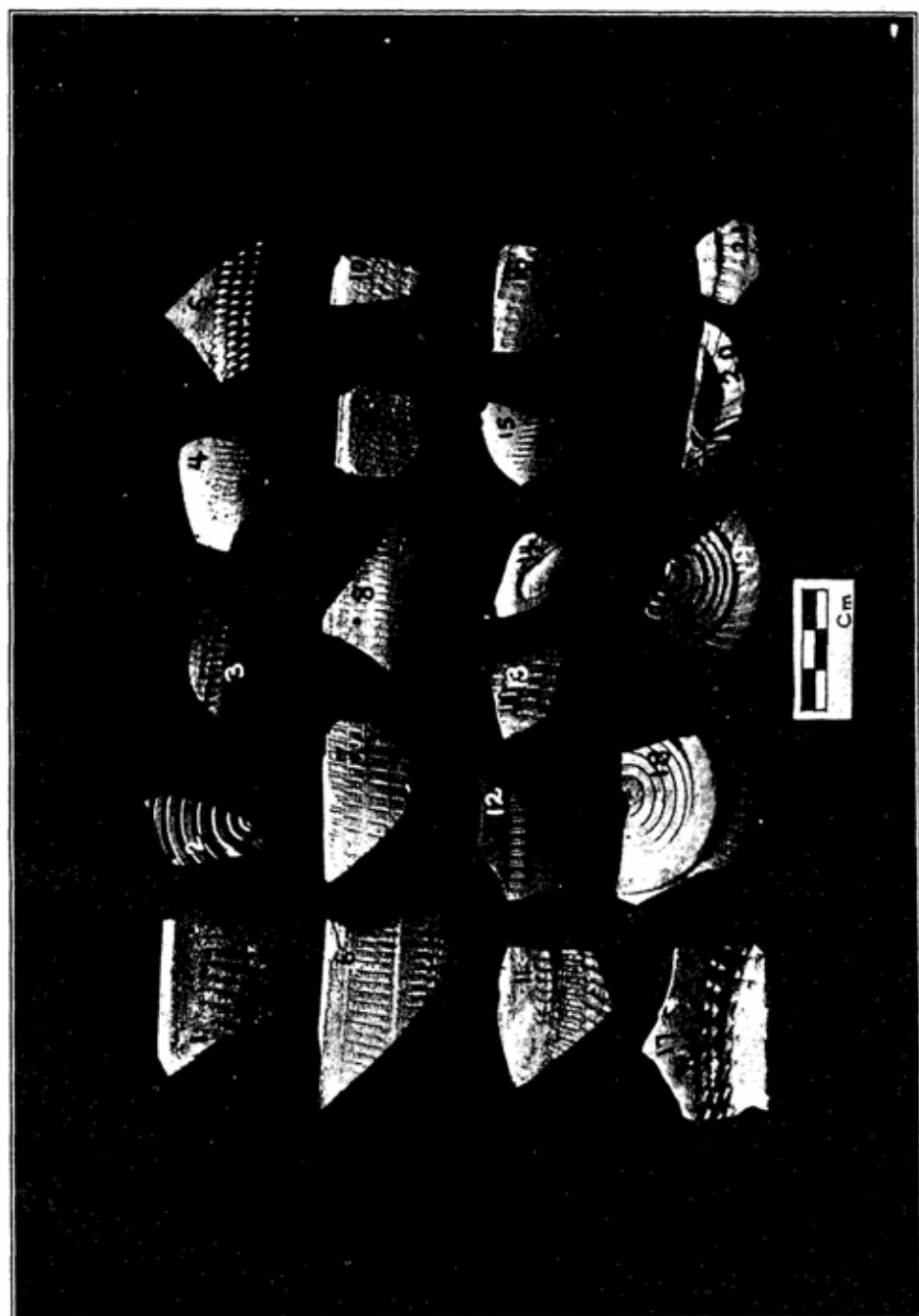


PLATE 32A

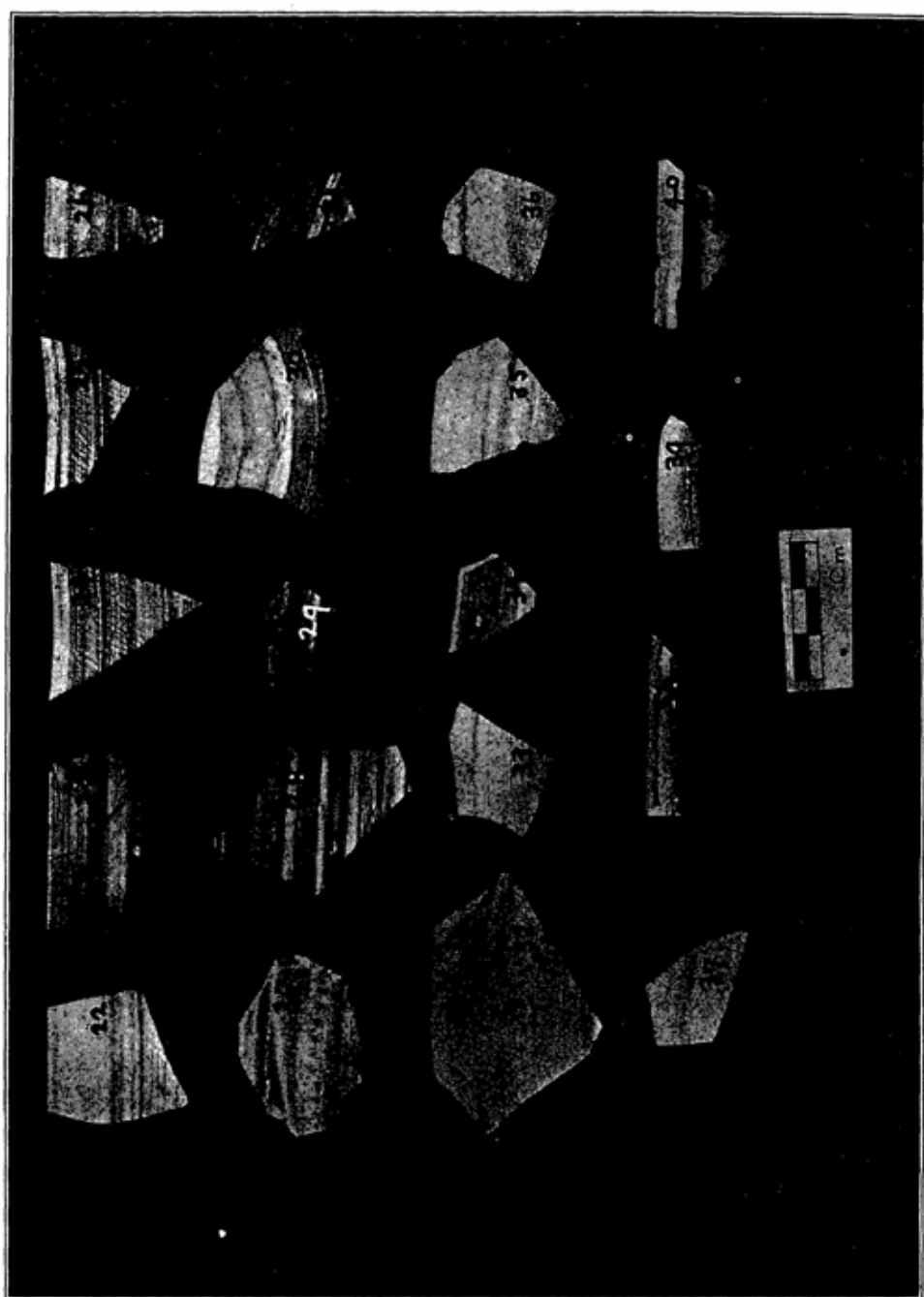


PLATE 32B





CATALOGUED

*"A book that is shut is but a block"*

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